

# SIEMENS

## FUJI-Reader

**SP**

## Service Manual

Checks, Replacement and Adjustment of Parts

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# **CR-IR347/CR-IR347P**

## **Service Manual**

Checks, Replacement and Adjustment  
of Parts (MC)



# CR-IR347 Service Manual – Contents

## Checks, Replacement and Adjustment of Parts (MC)

1. Check/Adjustment Procedures for Each Unit .....	MC-2
2. Table of Contents .....	MC-4
3. Removing and Installing the Covers .....	MC-8
4. Removing and Installing the Cassette Set Unit .....	MC-10
4.1 Cassette Set Unit .....	MC-10
4.2 Shutter .....	MC-12
4.3 Cassette Ejection Sensor (SK1) .....	MC-14
4.4 Barcode Reader (BCRK1) .....	MC-16
4.5 Pulling Out the Tray .....	MC-20
4.6 Cassette Hold Solenoid (SOLK1) .....	MC-26
4.7 Cassette Hold Sensor (SK3) .....	MC-32
4.8 Claw Guide Assembly .....	MC-34
4.9 Cassette IN Sensor (SK2) .....	MC-40
4.10 Rubber Roller .....	MC-50
4.11 Guide Plate .....	MC-52
4.12 Guide Stoppers .....	MC-64
4.13 Movable Guides .....	MC-66
5. Removing and Installing the IP Removal Unit .....	MC-74
5.1 IP Removal Unit .....	MC-74
5.2 IP Leak Valve (SVL1) .....	MC-78
5.3 Suction Cup HP Sensor (SL1) .....	MC-80
5.4 Timing Belt (for IP Conveyance) .....	MC-86
5.5 Guide Plate A .....	MC-90
5.6 Rubber Rollers C and D .....	MC-92
5.7 Rubber Roller (Large) .....	MC-94
5.8 Guide Plate D .....	MC-96
5.9 Guide Plates B and C .....	MC-98
5.10 Supports (for IP Removal Arm) .....	MC-100
5.11 Suction Cups .....	MC-104
5.12 IP Suction Pump (PL1) .....	MC-108
5.13 Inch/Metric Sensor (SL4) .....	MC-110
5.14 Suction Sensor (SL5) .....	MC-112
5.15 Receiver Rollers .....	MC-114
5.16 Guide Plates E, F, and G .....	MC-118
5.17 Suction Cup Driving Motor (ML1) .....	MC-120

5.18	Timing Belt (for Suction Cup Drive) .....	MC-122
5.19	Shaft (for Suction Cup Drive).....	MC-124
5.20	IP Removal Unit Upper Assembly .....	MC-128
5.21	Rubber Roller A.....	MC-130
5.22	IP Transport Motor (ML2) .....	MC-132
5.23	Shaft (for IP Conveyance) .....	MC-134
5.24	Rubber Roller B.....	MC-136
6.	Removing and Installing the Erasure Conveyor .....	MC-138
6.1	Erasure Lamp Assembly .....	MC-138
6.2	Erasure Conveyor .....	MC-140
6.3	Cleaning Roller Assembly .....	MC-144
6.4	Cleaning Rollers.....	MC-146
6.5	Erasure Lamps (LAMP1-LAMP5) .....	MC-148
6.6	Erasure Thermostatic Switch (TSW2) .....	MC-150
6.7	Erasure Thermostatic Switch (TSW1) .....	MC-152
6.8	Erasure Cooling Fan (FANM1) .....	MC-154
6.9	Sockets .....	MC-156
6.10	Timing Belts .....	MC-160
6.11	Lamp House Assembly .....	MC-164
6.12	Filter .....	MC-166
6.13	Reflection Plate .....	MC-168
6.14	IP Transport Motor (MM1) .....	MC-170
6.15	Rubber Rollers (Upper) .....	MC-172
6.16	Light Protect Plates .....	MC-174
6.17	Rubber Rollers (Lower) .....	MC-176
6.18	Guide Plates .....	MC-178
7.	Pulling Out and Pushing In the Scanner Unit.....	MC-182

<b>8.</b>	<b>Removing and Installing the Side-Positioning Conveyor .....</b>	<b>MC-188</b>
8.1	Side-Positioning Conveyor .....	MC-188
8.2	Grip Release Motor (MN2) .....	MC-192
8.3	Barcode Reader (BCRN1).....	MC-194
8.4	Side-Positioning Mechanism HP Sensor (SN1) .....	MC-196
8.5	Grip Release HP Sensor (SN2) .....	MC-198
8.6	Cleaning Guide Drive Motor (MN4).....	MC-200
8.7	BCR08A Board .....	MC-202
8.8	Side-Positioning IP Sensor (SN3).....	MC-204
8.9	Cleaning Guide HP Sensor (SN4) .....	MC-206
8.10	Cleaning Guide Assembly .....	MC-208
8.11	Shaft (for Cleaning Guide Assembly) .....	MC-214
8.12	Guide Plate C .....	MC-218
8.13	Timing Belt (for IP Conveyance).....	MC-220
8.14	Guide Plate G .....	MC-222
8.15	Rubber Rollers (Rear) .....	MC-226
8.16	Wires (Left Side).....	MC-230
8.17	Wires (Right Side) .....	MC-234
8.18	Timing Belt (for Side-Positioning Mechanism) .....	MC-240
8.19	Shaft (for Grip Release) .....	MC-246
<b>9.</b>	<b>Removing and Installing the Scanning Optics Unit .....</b>	<b>MC-250</b>
9.1	Adjusting the Format .....	MC-250
9.2	Shading and Sensitivity Corrections .....	MC-254
9.3	Checking for Image Problems .....	MC-258
9.4	Removing and Installing the Scanning Optics Unit.....	MC-262
9.5	LD Assembly .....	MC-266
9.6	Polygon Assembly .....	MC-270
9.7	SYN08A Board.....	MC-274

<b>10.</b>	<b>Removing and Installing the Subscanning Unit</b>	<b>MC-278</b>
10.1	Driving-Side Grip Release HP Sensor (SZ2)	MC-278
10.2	Mirror HP Sensor (SZ4)	MC-280
10.3	Rubber Belt and SUS Belt	MC-282
10.4	Kapton® Belt	MC-284
10.5	Flywheel	MC-286
10.6	Subscanning Motor MZ1 (FFM)	MC-288
10.7	PMT08D Board	MC-292
10.8	PMR08C Board	MC-296
10.9	Light-Collecting Guide Assembly (for Front Surface)	MC-300
10.10	Light-Collecting Guide Assembly (for Back Surface)	MC-308
10.11	Light-Collecting Mirror and IP Leading-Edge Sensor (SZ1/SED08D)	MC-320
10.12	Glass Guide	MC-326
10.13	Lower Rubber Rollers	MC-332
10.14	Mirror Driving Motor (MZ4)	MC-336
10.15	Driving-Shaft Grip Motor (MZ2)	MC-338
10.16	Driven-Shaft Grip Motor (MZ3)	MC-342
10.17	Driven-Side Grip Release HP Sensor (SZ3)	MC-346
10.18	Subscanning Unit Controller Assembly	MC-348
10.19	SCN08D/SCR08D Board	MC-354
10.20	PHV08D Board	MC-358
<b>11.</b>	<b>Removing and Installing the Hard Disk Drive (HDD)</b>	<b>MC-360</b>
11.1	Setting HDD	MC-361
11.2	Hard Disk Drive (HDD)	MC-362
<b>12.</b>	<b>Removing and Installing the Floppy Disk Drive (FDD)</b>	<b>MC-372</b>
12.1	Setting FDD	MC-372
12.2	Floppy Disk Drive (FDD)	MC-372

<b>13.</b>	<b>Removing and Installing the Power Supply Unit (JPS-6)</b>	<b>MC-374</b>
13.1	Power Supply Unit (JPS-6)	MC-374
13.2	Power Supply Unit Fuses	MC-378
<b>14.</b>	<b>Removing and Installing the Monitor</b>	<b>MC-382</b>
14.1	CRT (Monitor)	MC-382
14.2	Fuse Between Power Supply Unit and CRT	MC-388
<b>15.</b>	<b>Removing and Installing the PC Boards</b>	<b>MC-390</b>
15.1	MTH08C Board	MC-402
15.2	MTH08D Board	MC-404
15.3	CPU90E Board	MC-406
15.4	IMG07B Board	MC-410
15.5	BSP08A Board	MC-411
15.6	IMG08M Board	MC-413
15.7	CPU90F Board (Optional)	MC-414
15.8	LAN90B Board (Optional)	MC-416
15.9	HCP08A Board (Optional)	MC-417
15.10	IMG08H Board (Optional)	MC-418
15.11	SNS08C and DRV08A Boards	MC-420
15.12	VOL08A Board	MC-427
15.13	LED08A Board	MC-428
15.14	LED08B Board	MC-428
15.15	BCR08A Board	MC-429
15.16	SYN08A, PMT08D, PMR08C, SCN08D/SCR08D, and PHV08D boards	MC-429

## Control Sheet

Issue date	Revision number	Reason	Pages affected
10/20/2000	00	New release (FM2732)	All pages
05/15/2001	01	Corrections (FM3052)	MC - 9, 93, 146, 265, 331
08/30/2001	02	Design changes; measures against noise (FM3142)	MC - 25, 91, 93, 95, 130, 131, 137, 142-145, 161-162, 173, 177, 178, 180, 183, 184, 208-210, 214, 215, 223-225, 227-229, 241, 244, 245, 263, 267, 271, 275, 327, 328, 331, 333, 334, 349-353, 353.1-353.8, 361, 361.1-361.4, 362, 401
08/30/2002	03	Scanning optics unit, HDD, and other information added (FM3476)	MC - 6, 7, 33, 37, 148, 254-261, 261.1-261.4, 262-265, 265.1-265.8, 275, 293, 297, 356, 357, 359-429

# 1. Check/Adjustment Procedures for Each Unit

## Precautions for Check, Replacement, and Adjustment

In this volume, descriptions are omitted regarding components that do not require special attention or adjustment during their removal/reinstallation. For removal procedures for such components, refer to the Parts List Volume.

When performing check/replacement/adjustment procedures on the machine, the following precautions should be observed.



### **WARNING**

*To avoid electric shock hazards, power OFF the machine before performing the procedures.*



### **WARNING/CAUTION**

*Observe the warnings and cautions described in the "Safety Precautions."*



### **CAUTION**

*Never remove screws to which red paint is applied.*

### ◆ **INSTRUCTION** ◆

*Screws to which yellow paint is applied need to be adjusted at the time of component installation. When installing a component, follow the specified check/adjustment procedure.*

Some of the illustrations in this volume contain check/adjustment and half-punch indicators as needed.

For removal and reinstallation, perform the procedures as instructed by such indicators.

- Check/Adjustment indicator: Indicates that it is necessary to check or adjust the installation location when the part or component removed is to be reinstalled.



This indicator is placed in the illustration that depicts the procedures for removing the parts and components.

When you see this indicator, refer to its relevant "■ Check/Adjustment Procedures."

- Half-punch indicator:



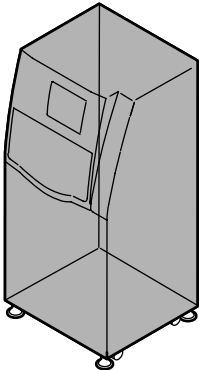
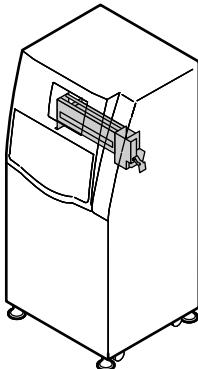
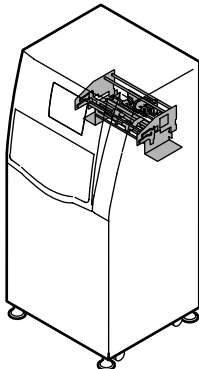
Indicates that it is necessary to align the half-punches when installing the parts or components.

However, it is not indicated for the half-punches for improving ease of assembly or preventing erroneous assembly procedures.

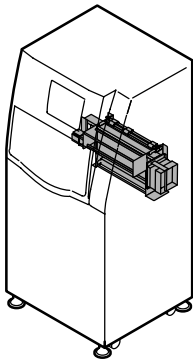
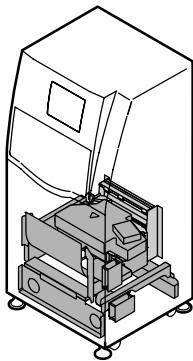
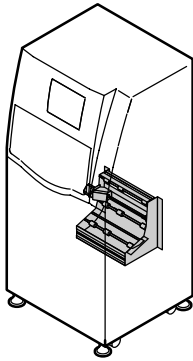
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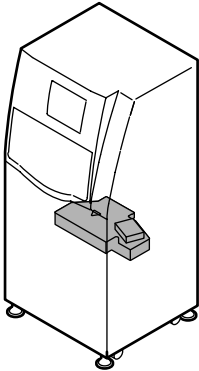
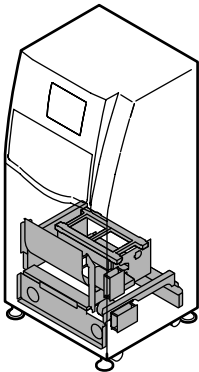
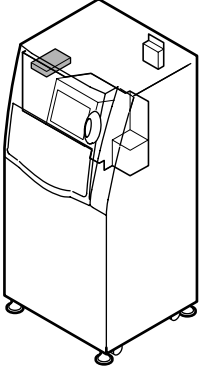
## 2. Table of Contents

<p>3. Covers</p> 	<p>3. Removing and Installing the Covers MC-8</p>
<p>4. Cassette set unit</p> 	<p>4. Removing and Installing the Cassette Set Unit MC-10</p> <ul style="list-style-type: none"> <li>4.1 Cassette Set Unit MC-10</li> <li>4.2 Shutter MC-12</li> <li>4.3 Cassette Ejection Sensor (SK1) MC-14</li> <li>4.4 Barcode Reader (BCRK1) MC-16</li> <li>4.5 Pulling Out the Tray MC-20</li> <li>4.6 Cassette Hold Solenoid (SOLK1) MC-26</li> <li>4.7 Cassette Hold Sensor (SK3) MC-32</li> <li>4.8 Claw Guide Assembly MC-34</li> <li>4.9 Cassette IN Sensor (SK2) MC-40</li> <li>4.10 Rubber Roller MC-50</li> <li>4.11 Guide Plate MC-52</li> <li>4.12 Guide Stoppers MC-64</li> <li>4.13 Movable Guides MC-66</li> </ul>
<p>5. IP Removal Unit</p> 	<p>5. Removing and Installing the IP Removal Unit MC-74</p> <ul style="list-style-type: none"> <li>5.1 IP Removal Unit MC-74</li> <li>5.2 IP leak valve (SVL1) MC-78</li> <li>5.3 Suction Cup HP Sensor (SL1) MC-80</li> <li>5.4 Timing Belt (for IP Conveyance) MC-86</li> <li>5.5 Guide Plate A MC-90</li> <li>5.6 Rubber Rollers C and D MC-92</li> <li>5.7 Rubber Roller (Large) MC-94</li> <li>5.8 Guide Plate D MC-96</li> <li>5.9 Guides Plates B and C MC-98</li> <li>5.10 Supports (for IP Removal Arm) MC-100</li> <li>5.11 Suction Cups MC-104</li> <li>5.12 IP Suction Pump (PL1) MC-108</li> <li>5.13 Inch/Metric Sensor (SL4) MC-110</li> <li>5.14 Suction Sensor (SL5) MC-112</li> <li>5.15 Receiver rollers MC-114</li> <li>5.16 Guide Plates E, F, and G MC-118</li> <li>5.17 Suction Cup Driving Motor (ML1) MC-120</li> <li>5.18 Timing Belt (for Suction Cup Drive) MC-122</li> <li>5.19 Shaft (for Suction Cup Drive) MC-124</li> <li>5.20 IP Removal Unit Upper Assembly MC-128</li> <li>5.21 Rubber Roller A MC-130</li> <li>5.22 IP Transport Motor (ML2) MC-132</li> <li>5.23 Shaft (for IP Conveyance) MC-134</li> <li>5.24 Rubber Roller B MC-136</li> </ul>

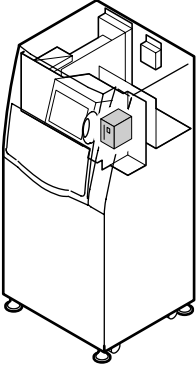
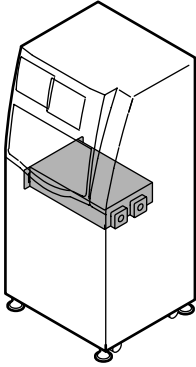
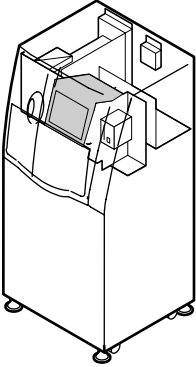
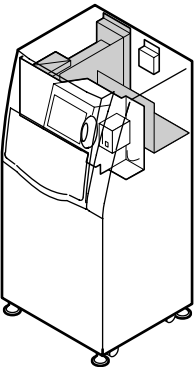
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<p>6. Erasure conveyor</p> 	<p>6. Removing and Installing the Erasure Conveyor MC-138</p> <ul style="list-style-type: none"> <li>6.1 Erasure Lamp Assembly MC-138</li> <li>6.2 Erasure Conveyor MC-140</li> <li>6.3 Cleaning Roller Assembly MC-144</li> <li>6.4 Cleaning Rollers MC-146</li> <li>6.5 Erasure Lamps (LAMP1-LAMP5) MC-148</li> <li>6.6 Erasure Thermostatic Switch (TSW2) MC-150</li> <li>6.7 Erasure Thermostatic Switch (TSW1) MC-152</li> <li>6.8 Erasure Cooling Fan (FANM1) MC-154</li> <li>6.9 Sockets MC-156</li> <li>6.10 Timing Belts MC-160</li> <li>6.11 Lamp House Assembly MC-164</li> <li>6.12 Filter MC-166</li> <li>6.13 Reflection Plate MC-168</li> <li>6.14 IP Transport Motor (MM1) MC-170</li> <li>6.15 Rubber Rollers (Upper) MC-172</li> <li>6.16 Shielding Plates MC-174</li> <li>6.17 Rubber Rollers (Lower) MC-176</li> <li>6.18 Guide Plates MC-178</li> </ul>
<p>7. Scanner unit</p> 	<p>7. Pulling Out and Pushing In the Scanner Unit MC-182</p>
<p>8. Side-positioning conveyor</p> 	<p>8. Removing and Installing the Side-Positioning Conveyor MC-188</p> <ul style="list-style-type: none"> <li>8.1 Side-Positioning Conveyor MC-188</li> <li>8.2 Grip Release Motor (MN2) MC-192</li> <li>8.3 Barcode Reader (BCRN1) MC-194</li> <li>8.4 Side-Positioning Mechanism HP Sensor (SN1) MC-196</li> <li>8.5 Grip Release HP Sensor (SN2) MC-198</li> <li>8.6 Cleaning Guide Drive Motor (MN4) MC-200</li> <li>8.7 BCR08A Board MC-202</li> <li>8.8 Side-Positioning IP Sensor (SN3) MC-204</li> <li>8.9 Cleaning Guide HP Sensor (SN4) MC-206</li> <li>8.10 Cleaning Guide Assembly MC-208</li> <li>8.11 Shaft (for Cleaning Guide Assembly) MC-214</li> <li>8.12 Guide Plate C MC-218</li> <li>8.13 Timing Belt (for IP Conveyance) MC-220</li> <li>8.14 Guide Plate G MC-222</li> <li>8.15 Rubber Rollers (Rear) MC-226</li> <li>8.16 Wire (Left Side) MC-230</li> <li>8.17 Wires (Right Side) MC-234</li> <li>8.18 Timing Belt (for Side-Positioning Mechanism) MC-240</li> <li>8.19 Shaft (for Grip Release) MC-246</li> </ul>

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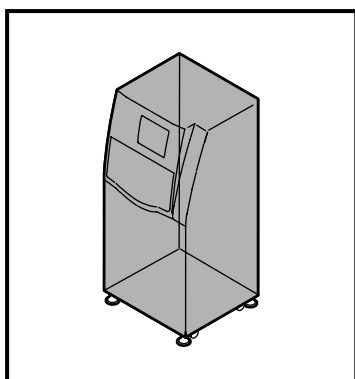
<p>9. Scanning optics unit</p> 	<p>9. Removing and Installing the Scanning Optics Unit MC-250</p> <ul style="list-style-type: none"> <li>9.1 Adjusting the Format MC-250</li> <li>9.2 Shading and Sensitivity Corrections MC-254</li> <li>9.3 Checking for Image Problems MC-258</li> <li>9.4 Removing and Installing the Scanning Optics Unit MC-262</li> <li>9.5 LD Assembly MC-266</li> <li>9.6 Polygon Assembly MC-270</li> <li>9.7 SYN08A Board MC-274</li> </ul>
<p>10. Subscanning unit</p> 	<p>10. Removing and Installing the Subscanning Unit MC-278</p> <ul style="list-style-type: none"> <li>10.1 Driving-Side Grip Release HP Sensor (SZ2) MC-278</li> <li>10.2 Mirror HP Sensor (SZ4) MC-280</li> <li>10.3 Rubber Belt and SUS Belt MC-282</li> <li>10.4 Kapton® Belt MC-284</li> <li>10.5 Flywheel MC-286</li> <li>10.6 Subscanning Motor MZ1 (FFM) MC-288</li> <li>10.7 PMT08D Board MC-292</li> <li>10.8 PMR08C Board MC-296</li> <li>10.9 Light-Collecting Guide Assembly (for Front Surface) MC-300</li> <li>10.10 Light-Collecting Guide Assembly (for Back Surface) MC-308</li> <li>10.11 Light-Collecting Mirror and IP Leading-Edge Sensor (SZ1/SED08D) MC-320</li> <li>10.12 Glass Guide MC-326</li> <li>10.13 Lower Rubber Rollers MC-332</li> <li>10.14 Mirror Driving Motor (MZ4) MC-336</li> <li>10.15 Driving-Shaft Grip Motor (MZ2) MC-338</li> <li>10.16 Driven-Shaft Grip Motor (MZ3) MC-342</li> <li>10.17 Driven-Side Grip Release HP Sensor (SZ3) MC-346</li> <li>10.18 Subscanning Unit Controller Assembly MC-348</li> <li>10.19 SCN08D/SCR08D Board MC-354</li> <li>10.20 PHV08D Board MC-358</li> </ul>
<p>11. HDD</p> 	<p>11. Removing and Installing the Hard Disk Drive (HDD) MC-360</p> <ul style="list-style-type: none"> <li>11.1 Setting HDD MC-361</li> <li>11.2 Hard Disk Drive (HDD) MC-362</li> </ul>

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<p>12. FDD</p> 	<p>12. Removing and Installing the Floppy Disk Drive (FDD)</p> <p>MC-372</p> <p>12.1 Setting FDD MC-372</p> <p>12.2 Floppy Disk Drive (FDD) MC-372</p>
<p>13. Power Supply Unit</p> 	<p>13. Removing and Installing the Power Supply Unit (JPS-6)</p> <p>MC-374</p> <p>13.1 Power Supply Unit (JPS-6) MC-374</p> <p>13.2 Power Supply Unit Fuses MC-378</p>
<p>14. Monitor</p> 	<p>14. Removing and Installing the Monitor</p> <p>MC-382</p> <p>14.1 CRT (Monitor) MC-382</p> <p>14.2 Fuse Between Power Supply Unit and CRT MC-388</p>
<p>15. PC Boards</p> 	<p>15. Removing and Installing the PC Boards</p> <p>MC-390</p> <p>15.1 MTH08C MC-402</p> <p>15.2 MTH08D MC-404</p> <p>15.3 CPU90E Board MC-406</p> <p>15.4 IMG07B Board MC-410</p> <p>15.5 BSP08A Board MC-411</p> <p>15.6 IMG08M Board MC-413</p> <p>15.7 CPU90F Board (Optional) MC-414</p> <p>15.8 LAN90B Board (Optional) MC-416</p> <p>15.9 HCP08A Board (Optional) MC-417</p> <p>15.10 IMG08H Board (Optional) MC-418</p> <p>15.11 SNS08C and DRV08A Boards MC-420</p> <p>15.12 VOL08A Board MC-427</p> <p>15.13 LED08A Board MC-428</p> <p>15.14 LED08B Board MC-428</p> <p>15.15 BCR08A Board MC-429</p> <p>15.16 SYN08A, PMT08D, PMR08C, SCN08D/SCR08C, and PHV08D Boards MC-429</p>

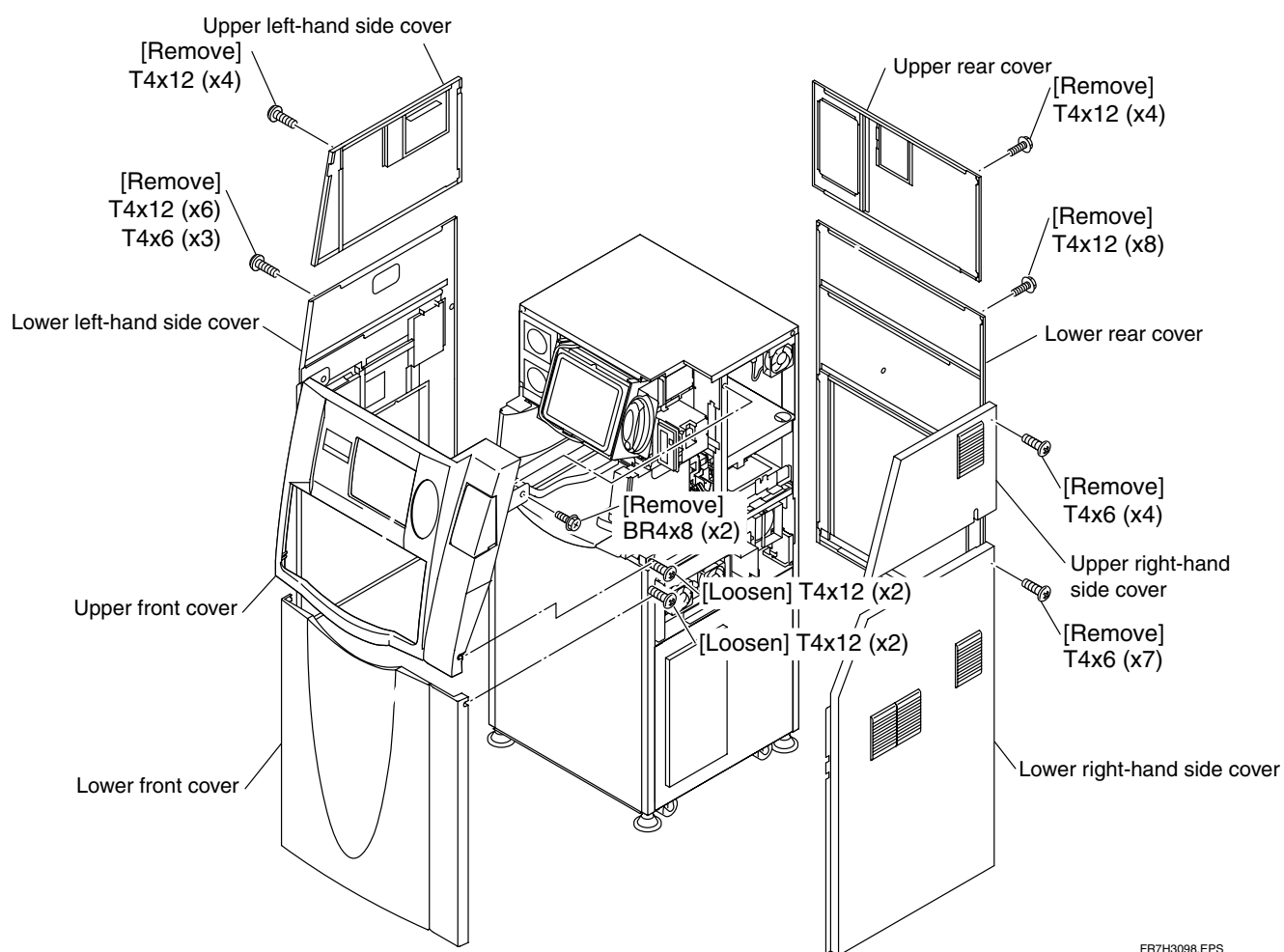
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### 3. Removing and Installing the Covers

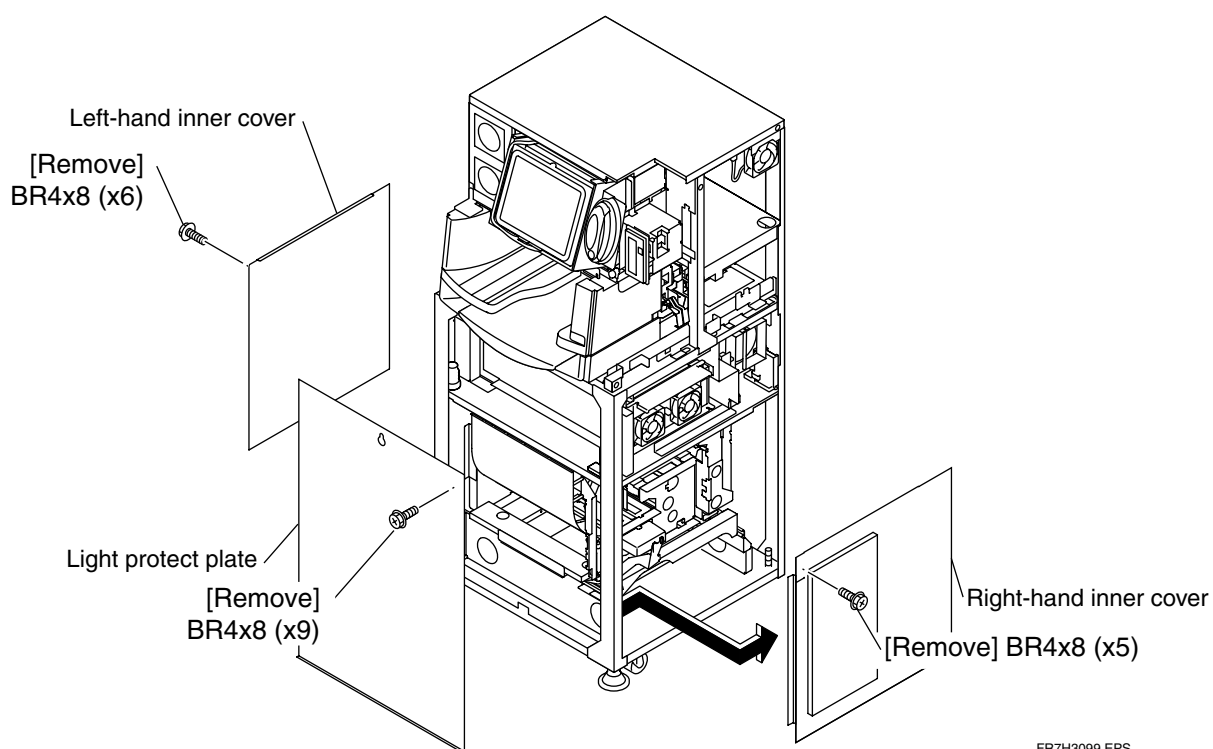


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#### ■ Removal procedure



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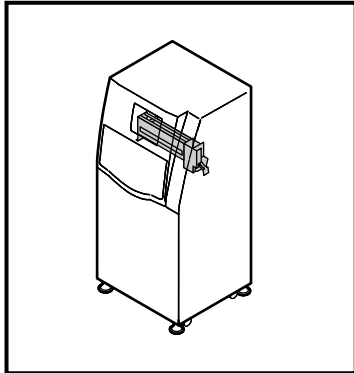


## ■ Installation procedure

Accomplish installation by reversing the removal procedure.

## 4. Removing and Installing the Cassette Set Unit

### 4.1 Cassette Set Unit



FR7H3001\*.EPS

#### ■ Removal procedure

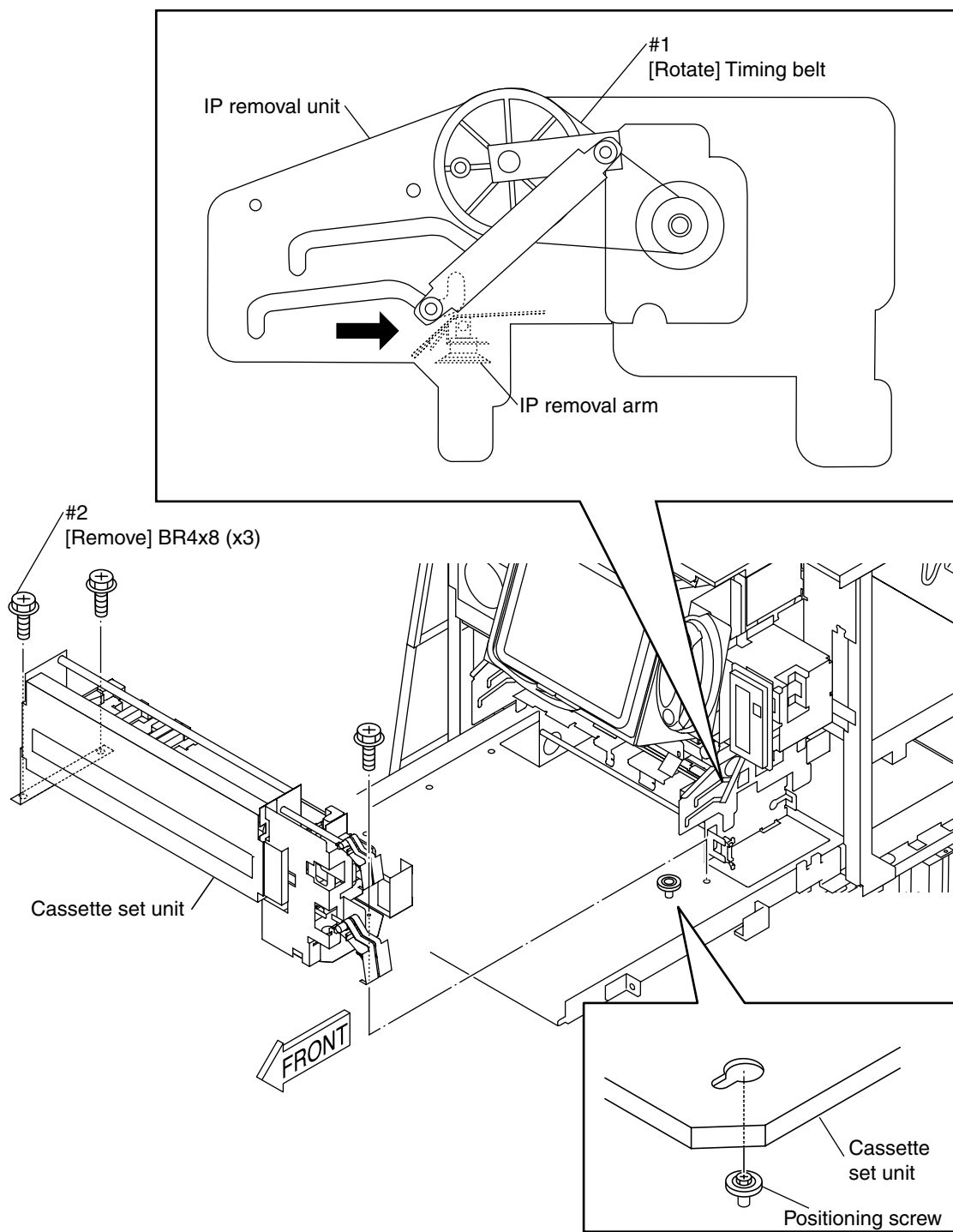
- (1) Pull out the tray.

☞ “4.5 Pulling Out the Tray”

(2) Remove the cassette set unit.

◆ **NOTE** ◆

*Before removing the cassette set unit, place the removal arm in the following position:*



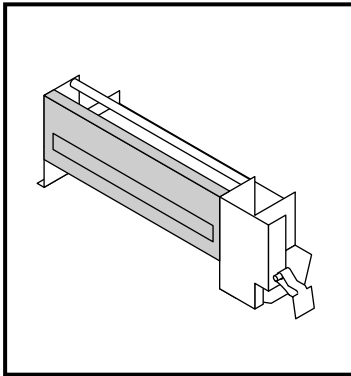
FR7H3315.EPS

## ■ Installation procedure

Accomplish installation by reversing the removal procedure.



## 4.2 Shutter



FR7H3002.EPS

### ■ Removal procedure

(1) Remove the following covers:

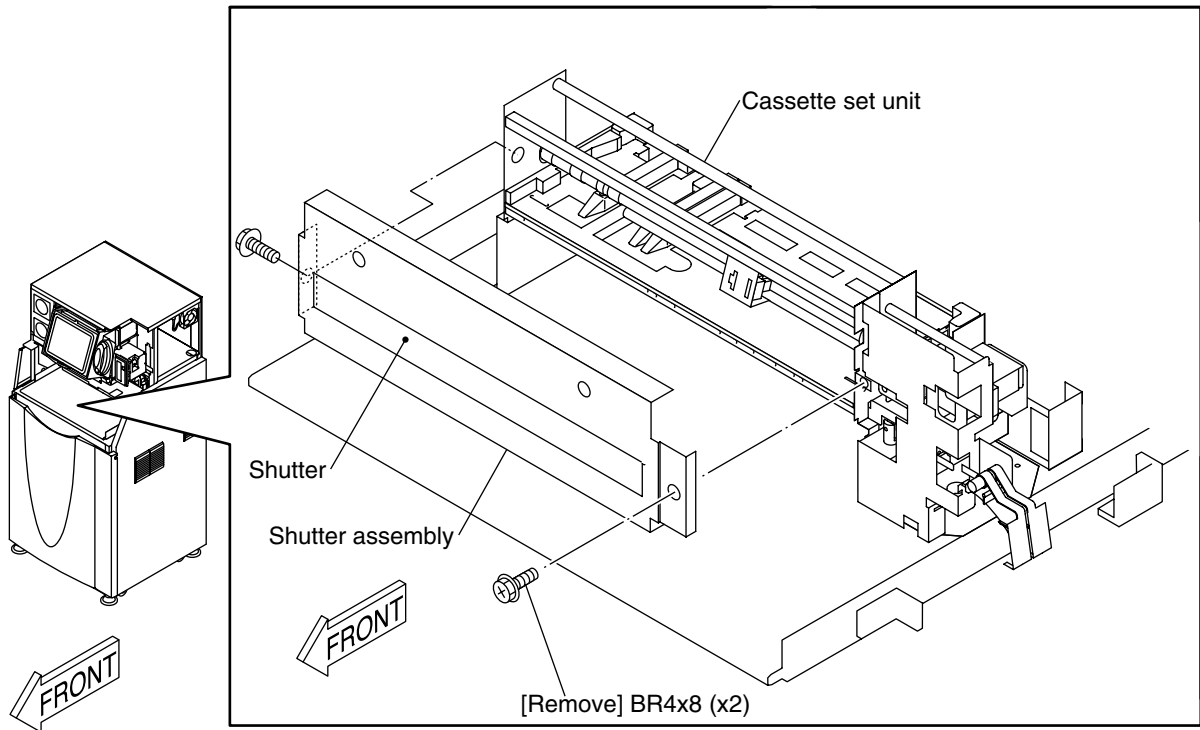
- Upper right-hand side cover
- Upper left-hand side cover
- Upper front cover

☞ “3. Removing and Installing the Covers”

(2) Remove the front shelf cover.

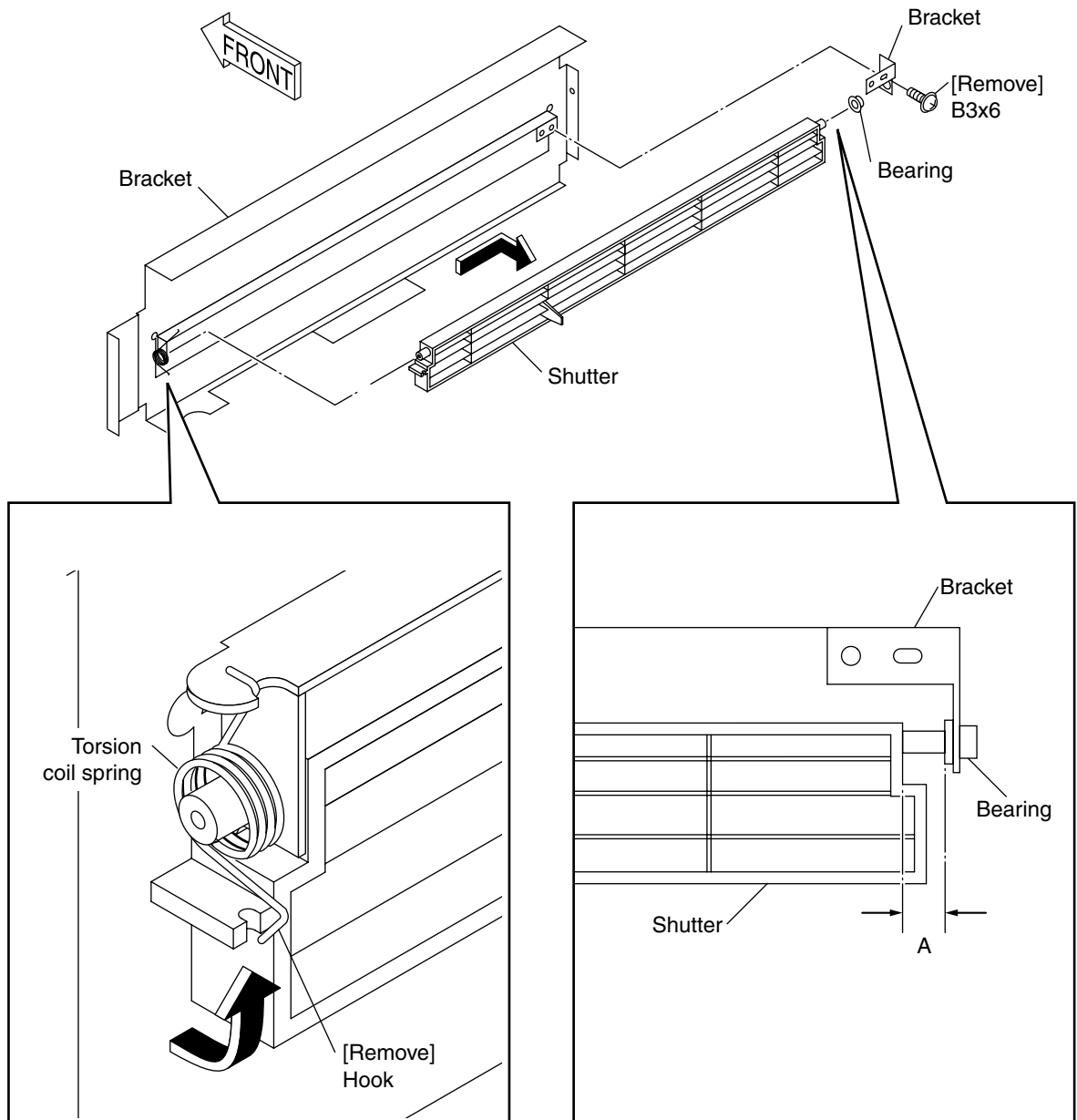
☞ “4.5 Pulling Out the Tray”

(3) Remove the shutter assembly.



FR7H3301.EPS

(4) Remove the shutter.



FR7H3302.EPS

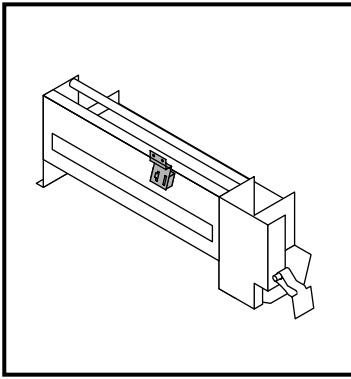
## ■ Installation procedure

### ◆ NOTE ◆

*When installing the shutter, ensure that gap A shown above permits the entry of a single thickness of a 150 mm scale but does not permit the entry of a single thickness of a 300 mm scale.*

To accomplish installation, reverse the removal procedure.

## 4.3 Cassette Ejection Sensor (SK1)



FR7H3003.EPS

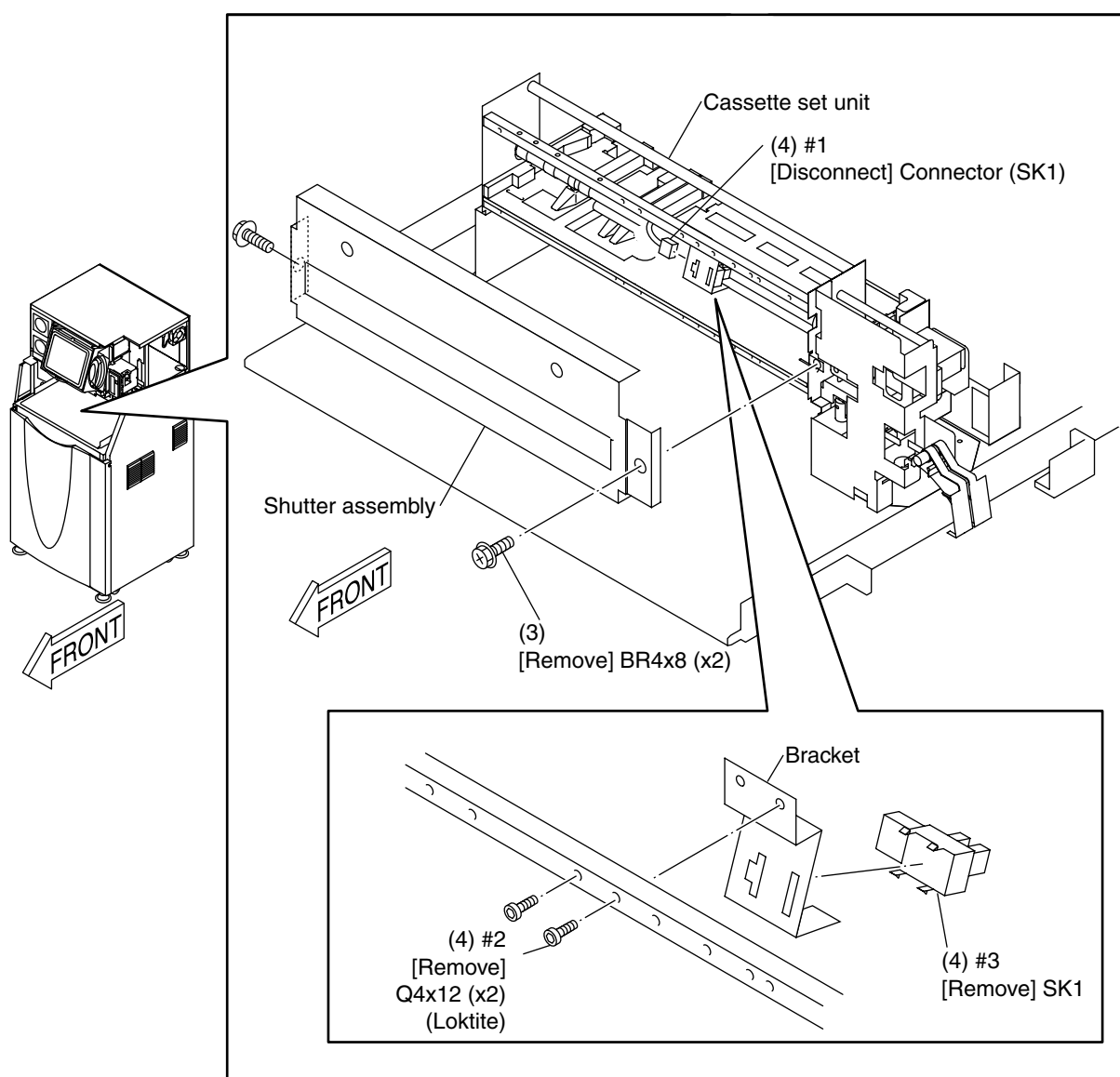
### ■ Removal procedure

- (1) Remove the following covers:
  - Upper right-hand side cover
  - Upper left-hand side cover
  - Upper front cover

☞ “3. Removing and Installing the Covers”
- (2) Remove the front shelf cover.

☞ “4.5 Pulling Out the Tray”

- (3) Remove the shutter assembly.
- (4) Remove the cassette ejection sensor (SK1).

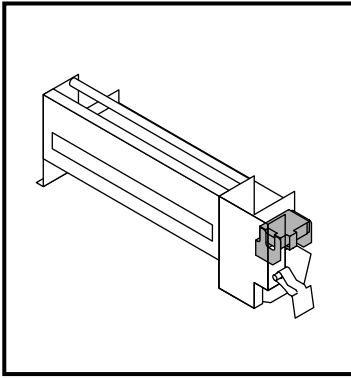


FR7H3304.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 4.4 Barcode Reader (BCRK1)



FR7H3004.EPS

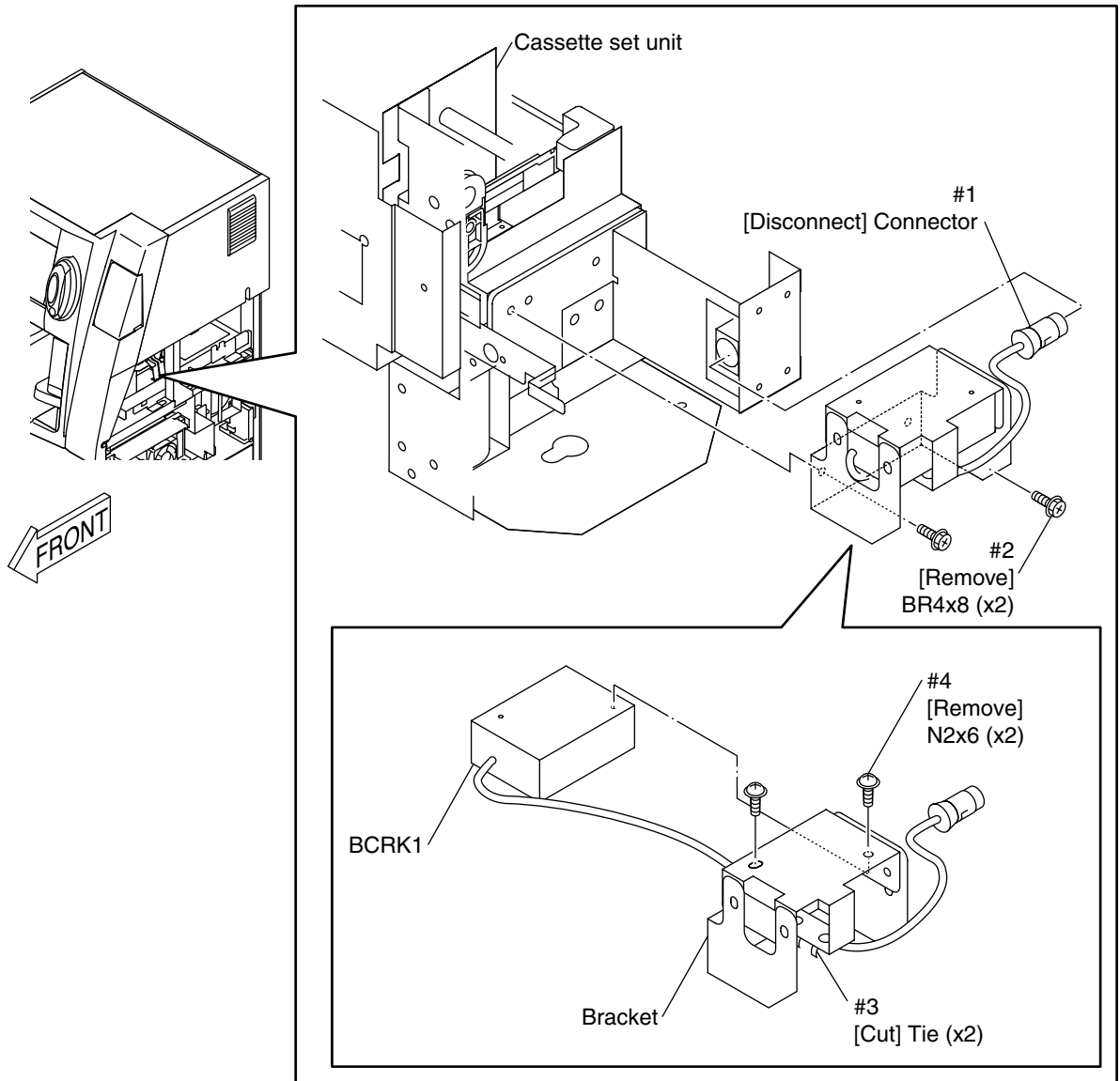
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover

☞ “3. Removing and Installing the Covers”

(2) Remove the barcode reader (BCRK1).

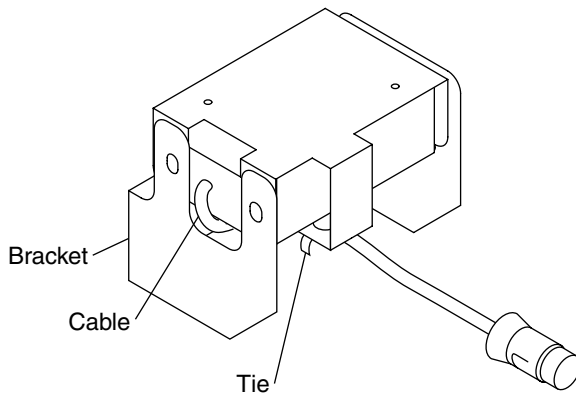


FR7H3306.EPS

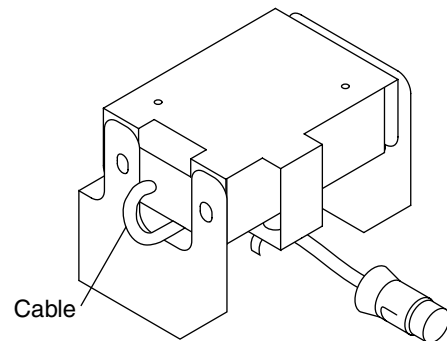
## ■ Installation procedure

### ◆ NOTE ◆

*When clamping the cable with a tie, ensure that the cable does not come out of the bracket.*



OK



NG

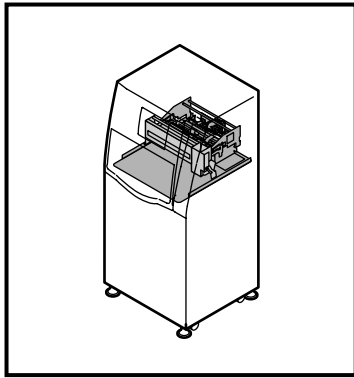
FR7H3307.EPS

To accomplish installation, reverse the removal procedure.

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## 4.5 Pulling Out the Tray



FR7H3005.EPS

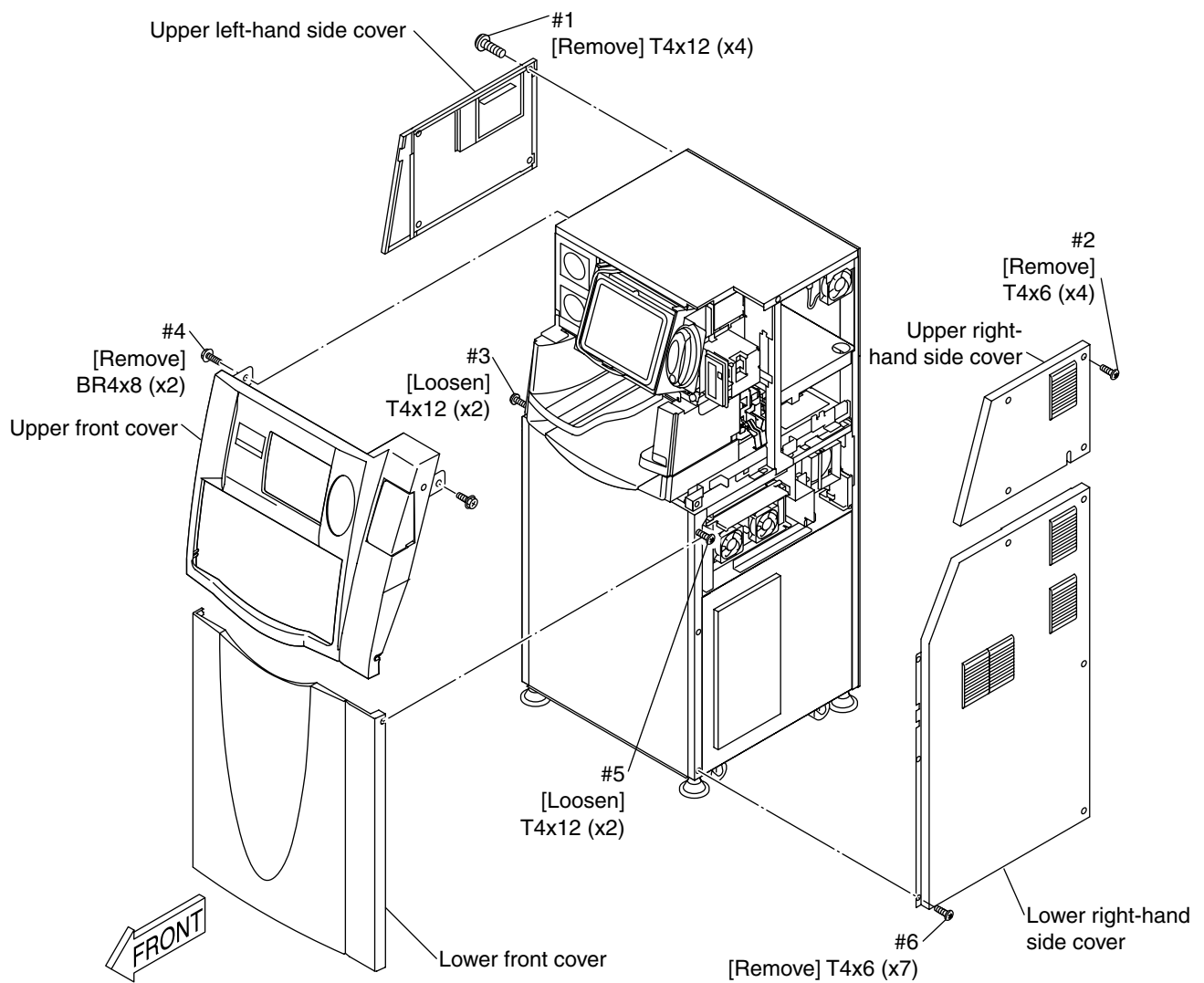
### ■ Pull-out procedure

(1) Remove the following covers:

- Upper left-hand side cover
- Upper right-hand side cover
- Upper front cover
- Lower front cover
- Lower right-hand side cover

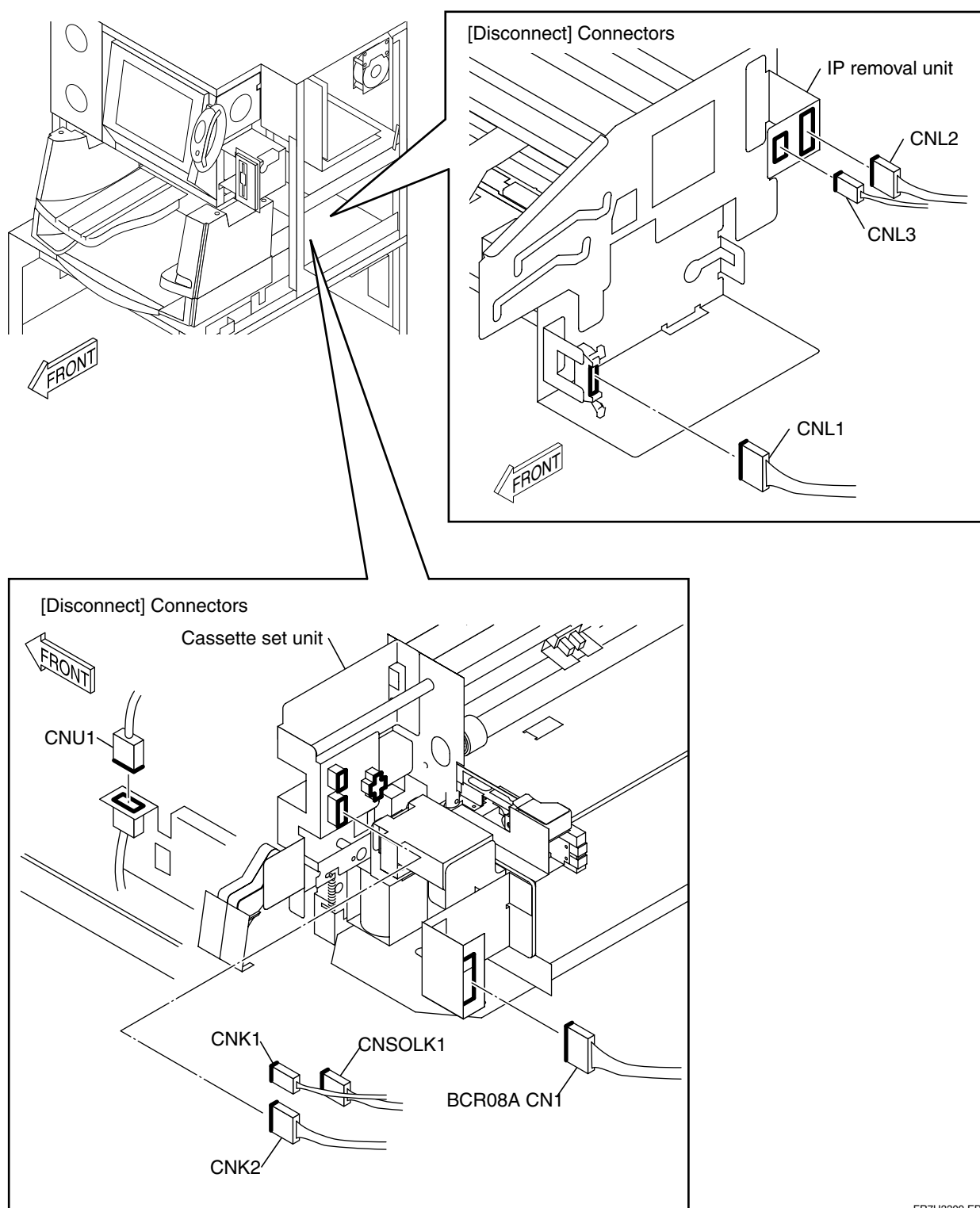
☞ “3. Removing and Installing the Covers”

## ◇ REFERENCE ◇



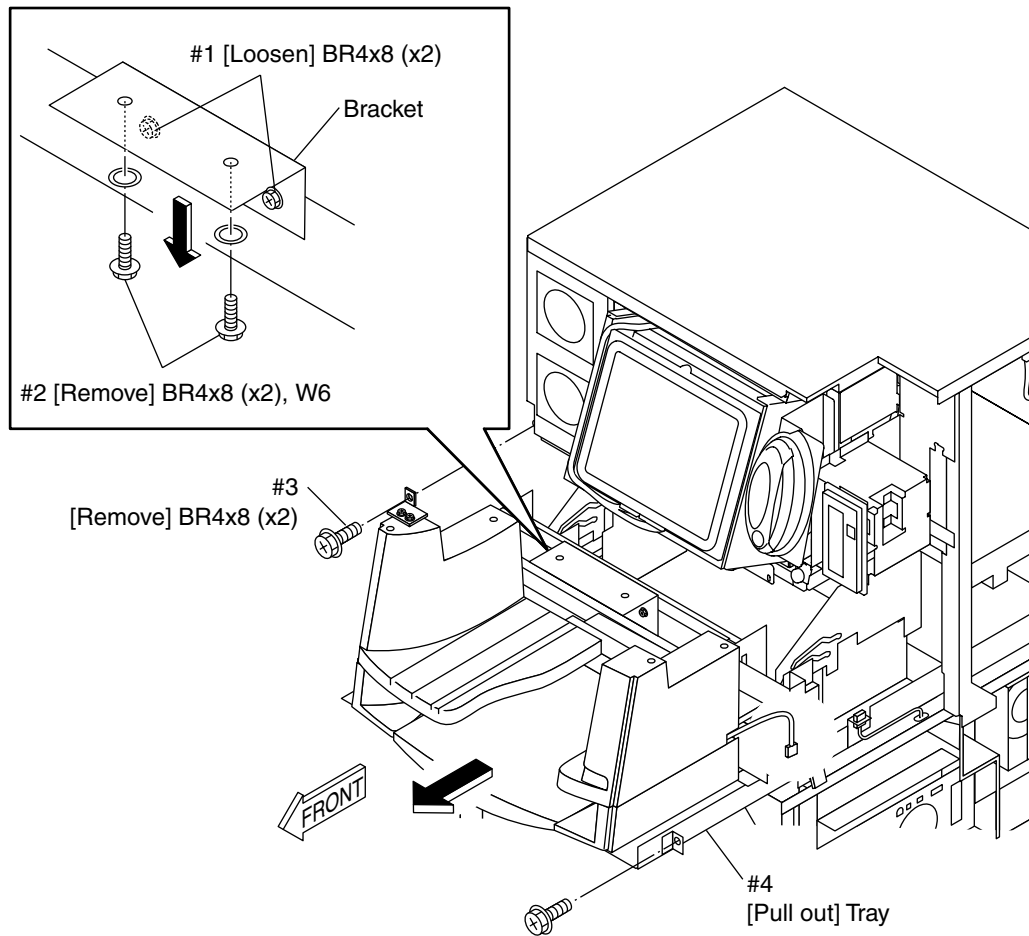
FR7H3308.EPS

(2) Disconnect the connectors.



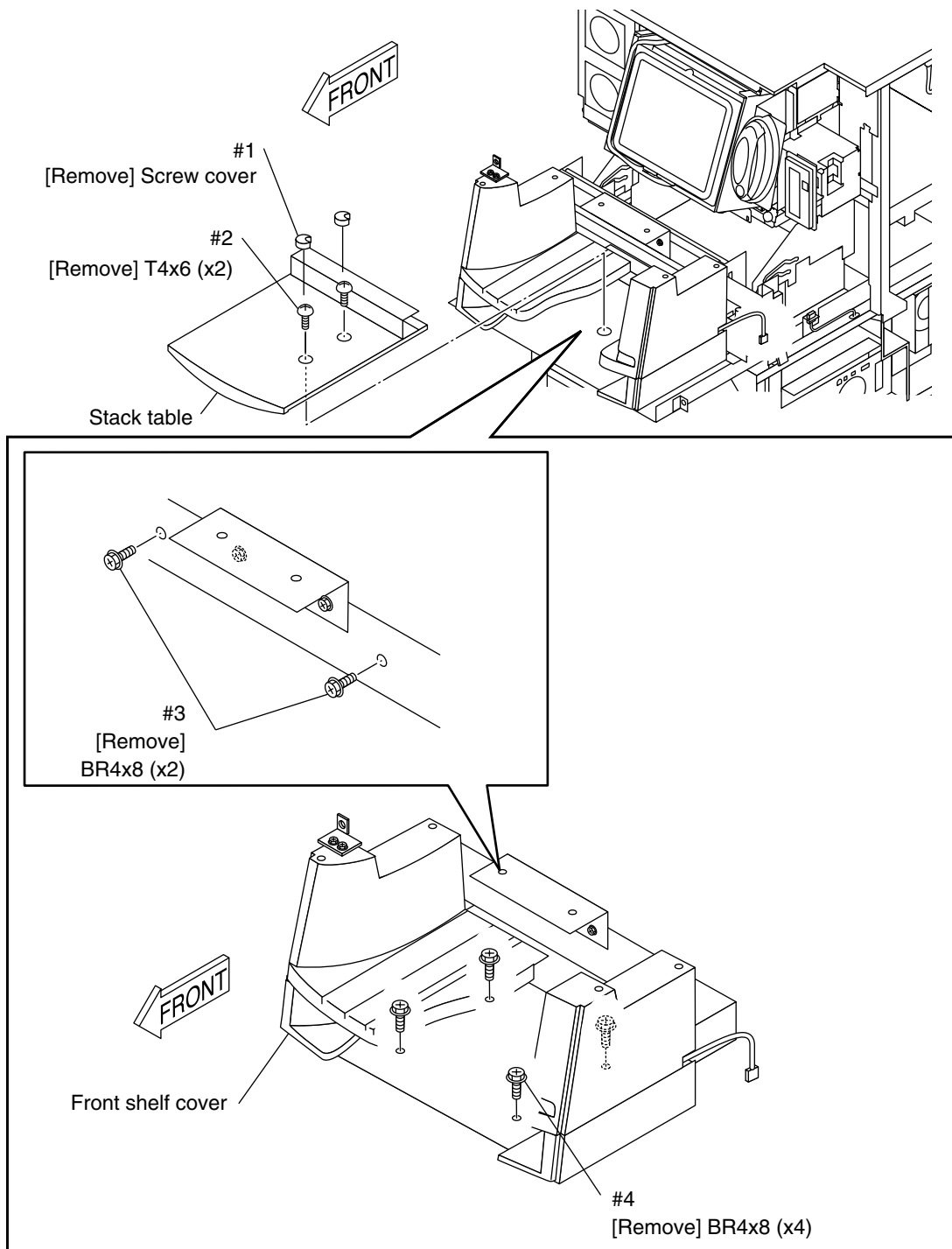
FR7H3309.EPS

(3) Pull out the tray.



FR7H3389.EPS

(4) Remove the front shelf cover.

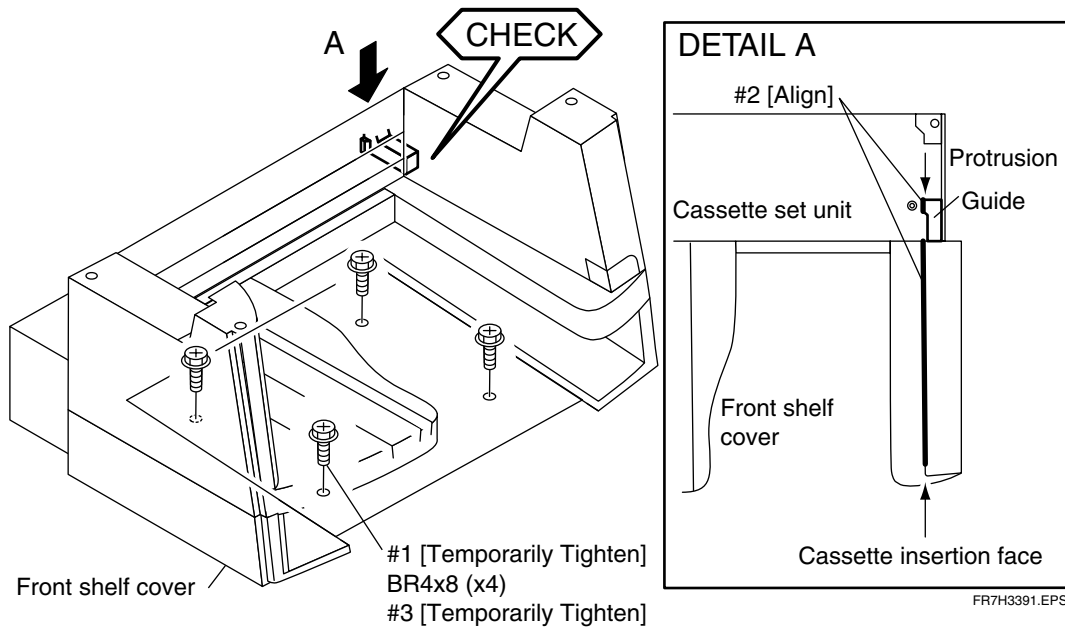


FR7H3373.EPS

## ■ Push-in procedure

### ◆ NOTE ◆

During reinstallation of the front shelf cover, align the cassette insertion face of the front shelf cover to the guide protrusion of the cassette set unit.  
If they are not aligned, a cassette hold failure may result.

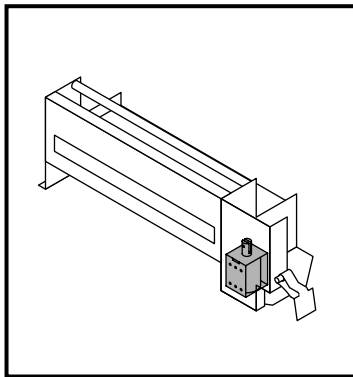


For push-in, reverse the pull-out procedures.

## ■ Check

Power ON the machine and make sure that a cassette hold failure does not occur when a cassette is inserted.

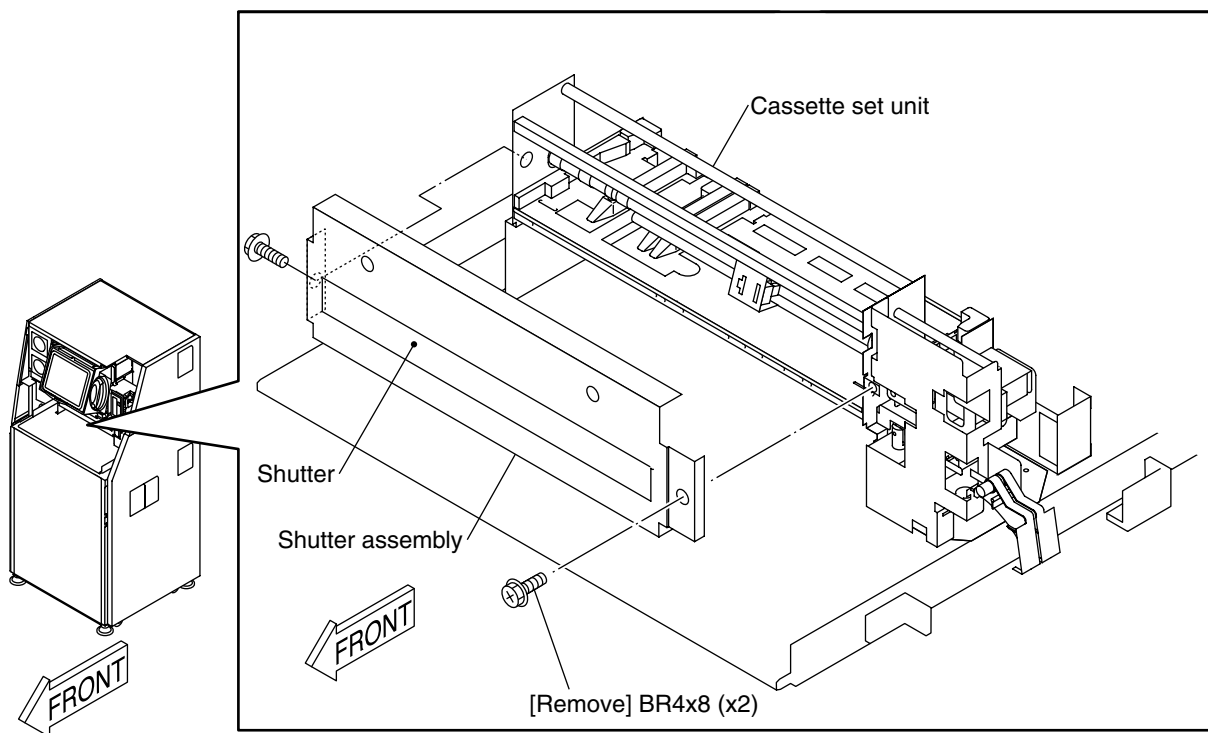
## 4.6 Cassette Hold Solenoid (SOLK1)



FR7H3006.EPS

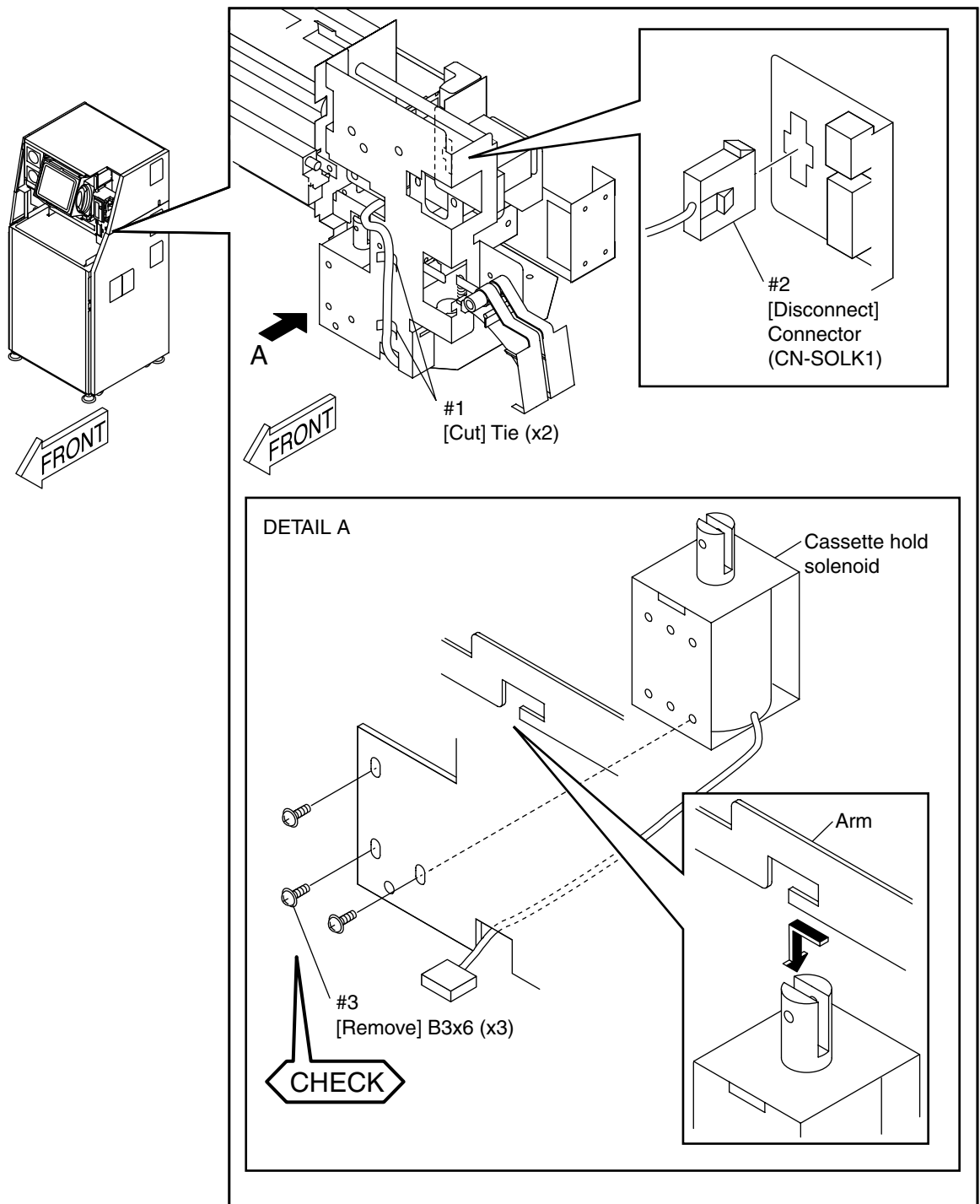
### ■ Removal procedure

- (1) Pull out the tray.  
☞ “4.5 Pulling Out the Tray”
- (2) Remove the shutter assembly.



FR7H3374.EPS

(3) Remove the cassette hold solenoid (SOLK1).



FR7H3310.EPS

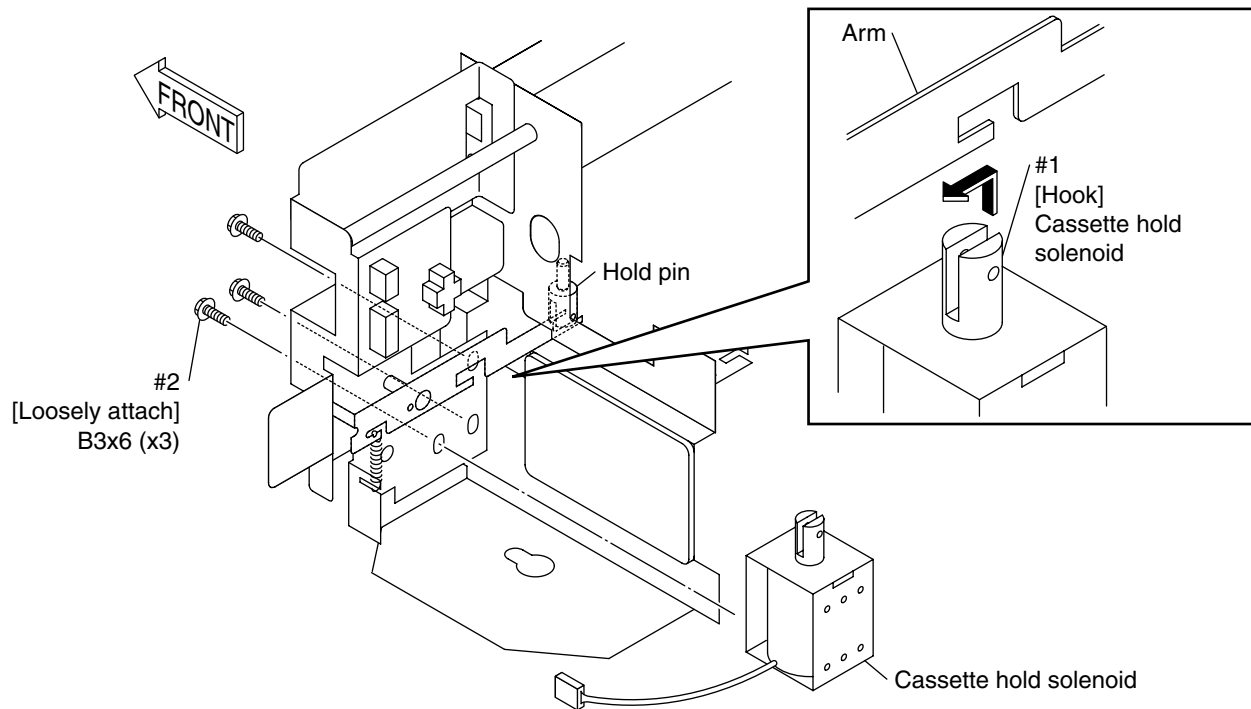


## ■ Installation procedure

(1) Temporarily retain the cassette hold solenoid.

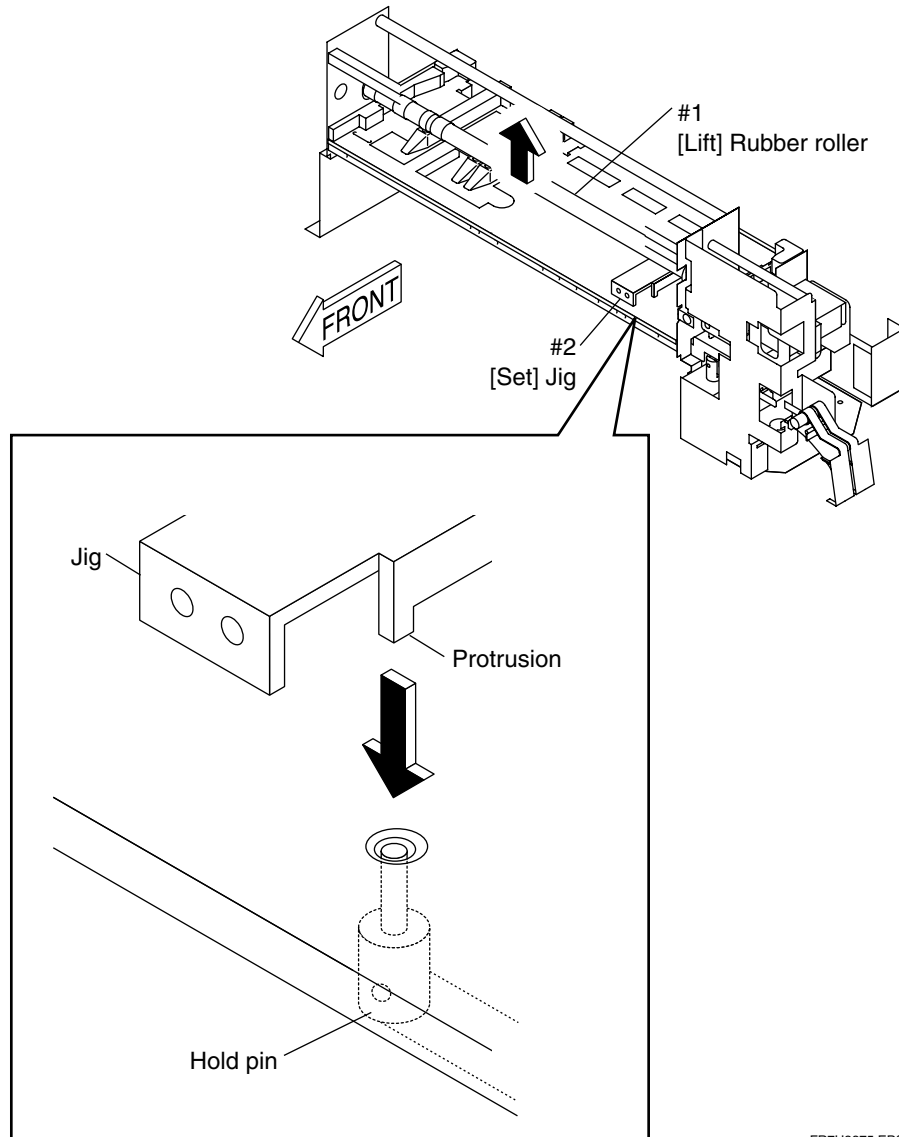
### ◆ NOTE ◆

*Before temporarily retain the cassette hold solenoid, attach the hold pin to the arm. After the cassette hold solenoid is temporarily retained, you cannot attach the hold pin to the arm.*



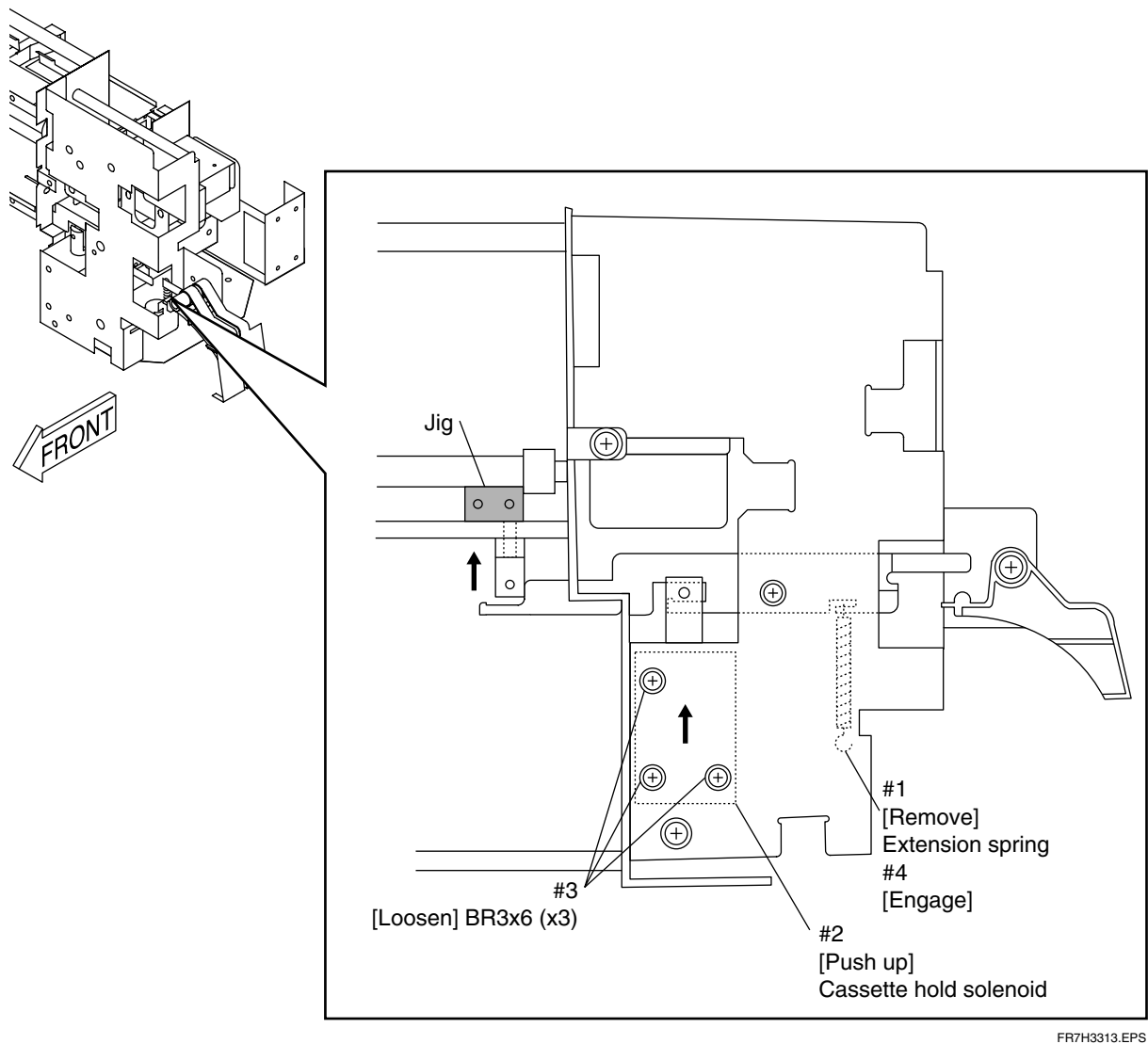
FR7H3312.EPS

- (2) Set the jig so that its protrusion goes into the hole in the guide plate.



FR7H3375.EPS

(3) Adjust the cassette hold solenoid mounting position.



(4) Remove the jig.

## ■ Check procedure

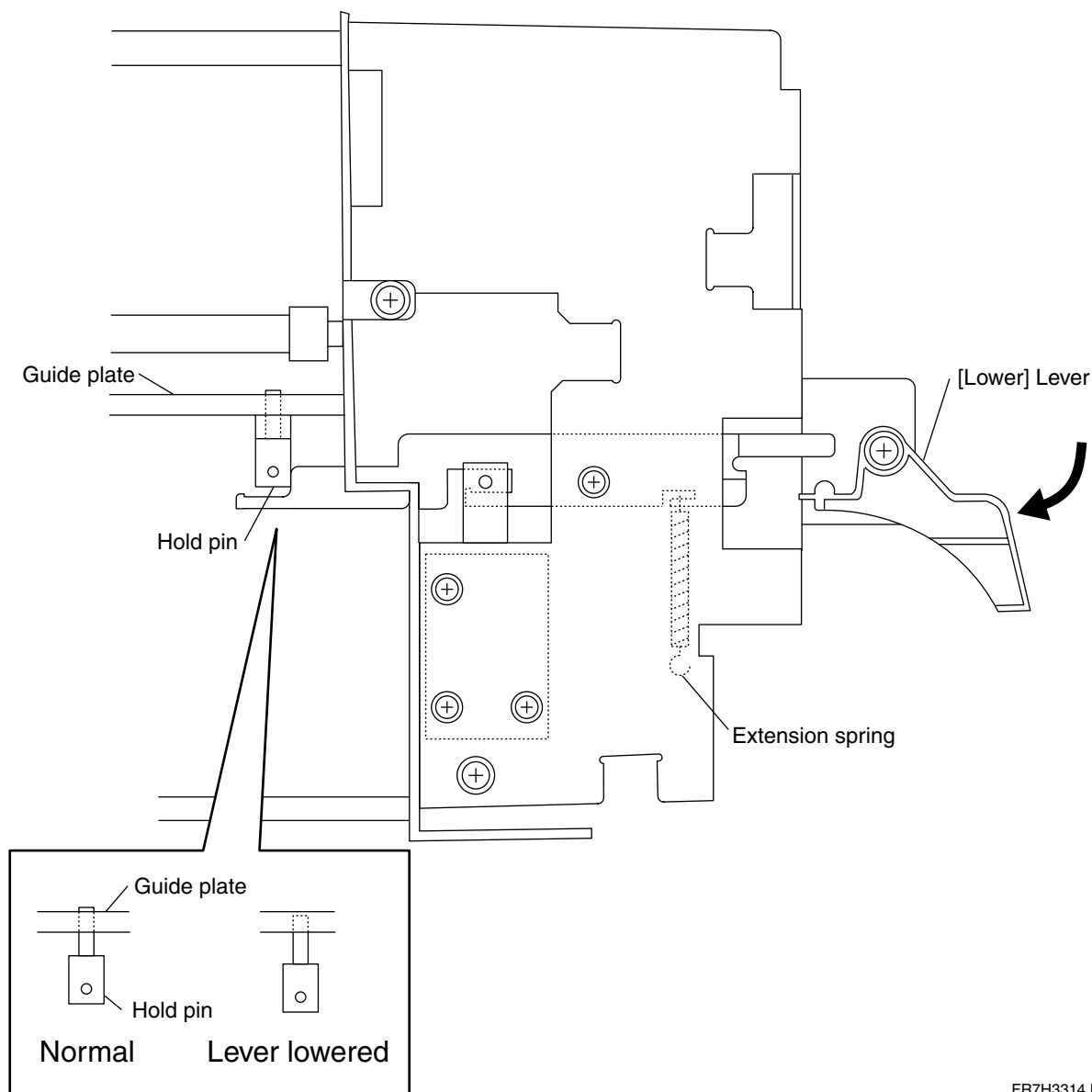
(1) Check that the cassette hold solenoid is in the following state:

- Normal condition

The hold pin end must be raised above the guide plate by the action of the extension spring.

- When the lever is lowered

The hold pin end must not be positioned above the guide plate.



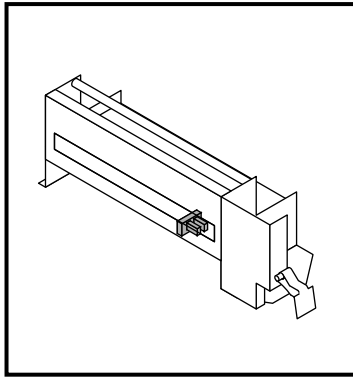
FR7H3314.EPS

### ◆ NOTE ◆

*If the hold pin is positioned above the guide plate when the lever is lowered, the cassette is damaged when it is inserted into position.*

(2) Complete installation by reversing the removal procedure.

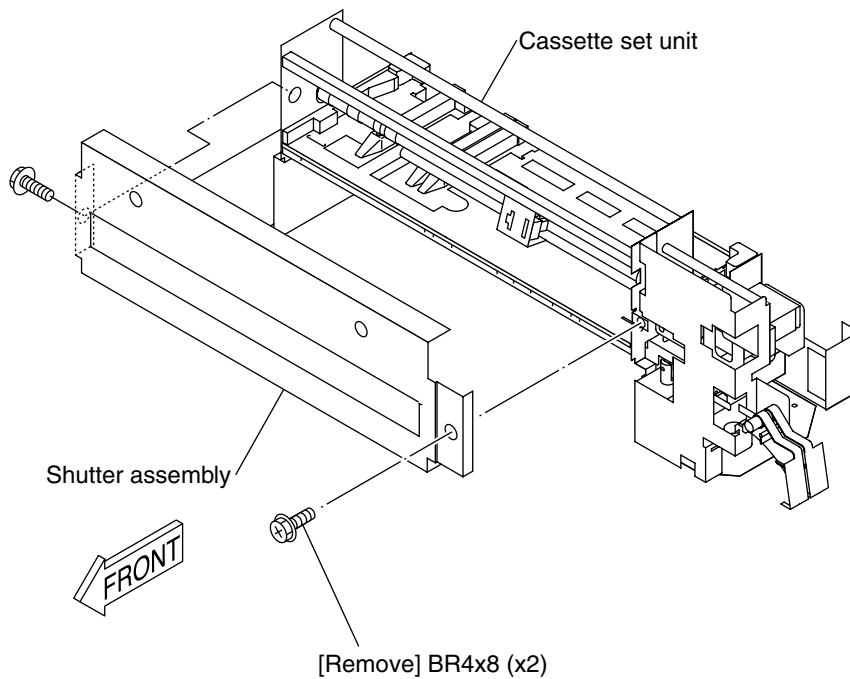
## 4.7 Cassette Hold Sensor (SK3)



FR7H3007.EPS

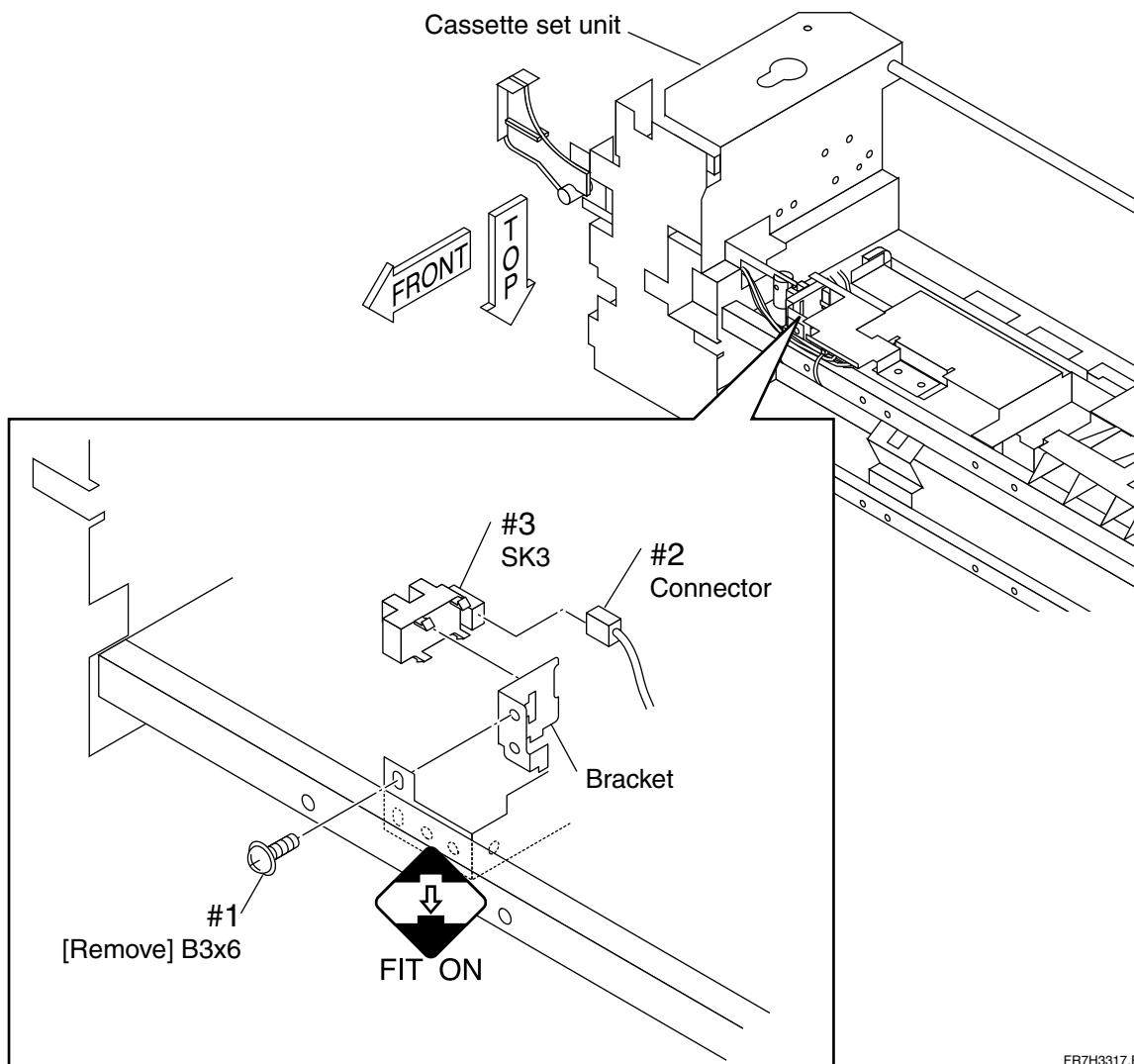
### ■ Removal procedure

- (1) Remove the cassette set unit.  
    ☞ “4.1 Cassette Set Unit”
- (2) Remove the shutter assembly.



FR7H3316.EPS

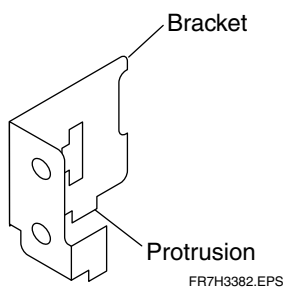
(3) Remove the cassette hold sensor (SK3).



## ■ Installation procedure

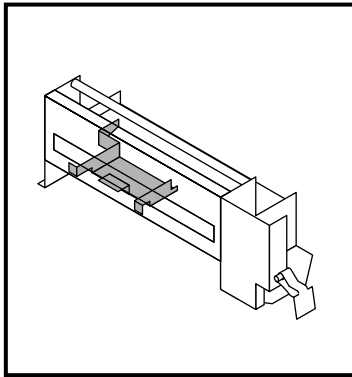
### ◆ NOTE ◆

*When mounting the bracket, secure it by aligning it with the dowel and pressing it upward.*



Accomplish installation by reversing the removal procedure.

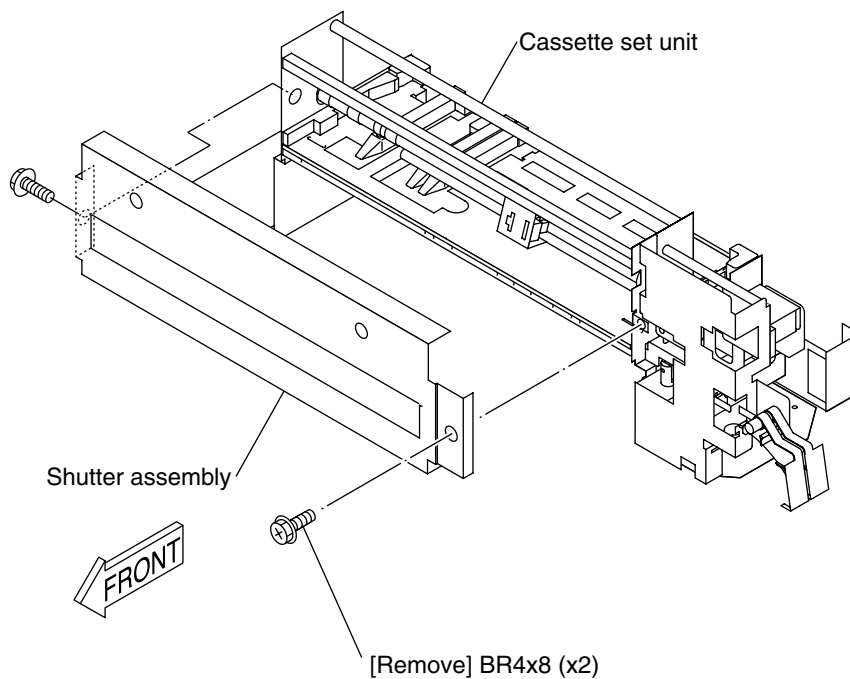
## 4.8 Claw Guide Assembly



FR7H3008.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.  
    ☞ “4.1 Cassette Set Unit”
- (2) Remove the shutter assembly.

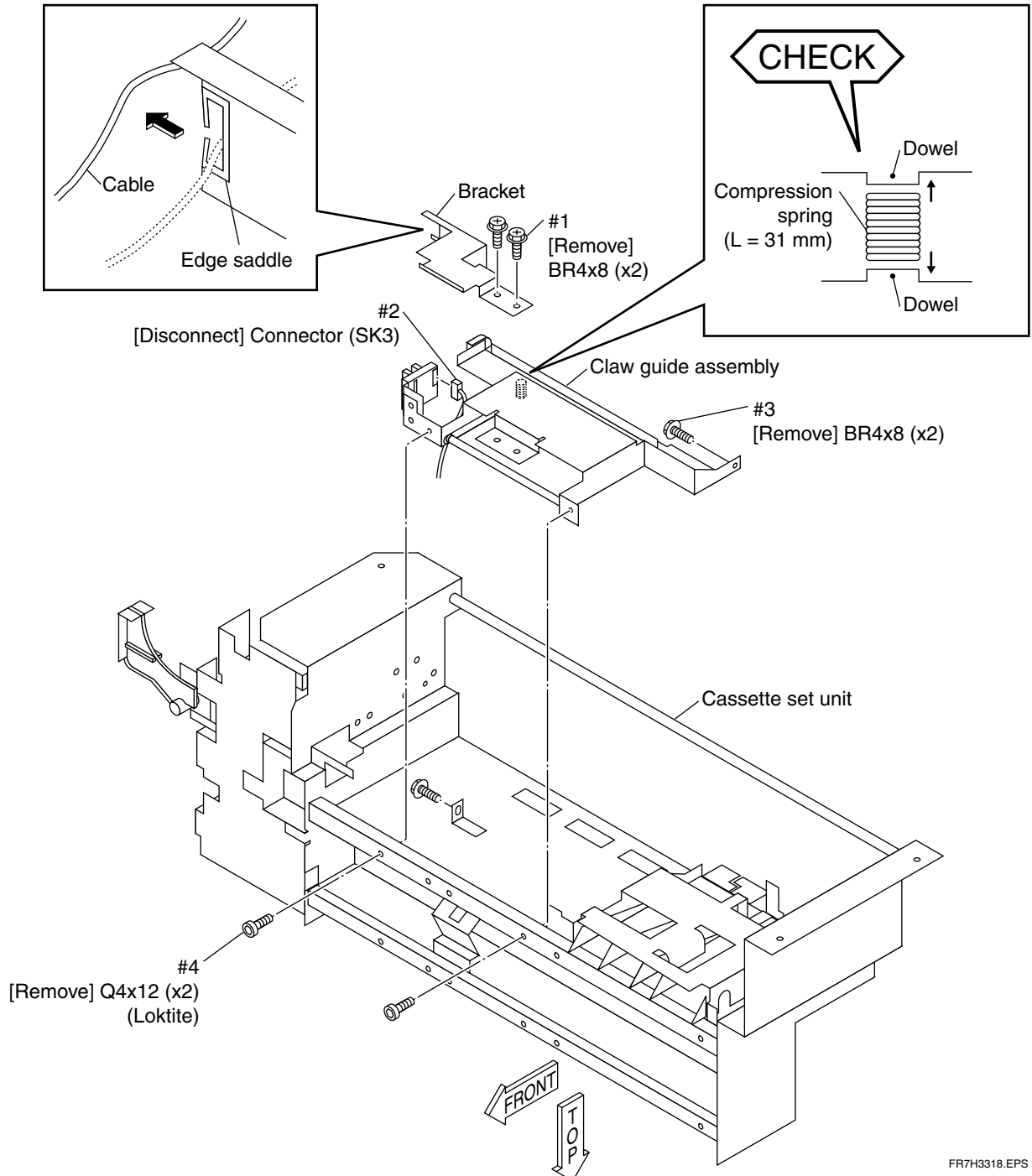


FR7H3359.EPS

◆ **NOTE** ◆

*When you remove the claw guide assembly, hold it down to prevent the compression coil spring from popping out.*

(3) Remove the claw guide assembly.



FR7H3318.EPS



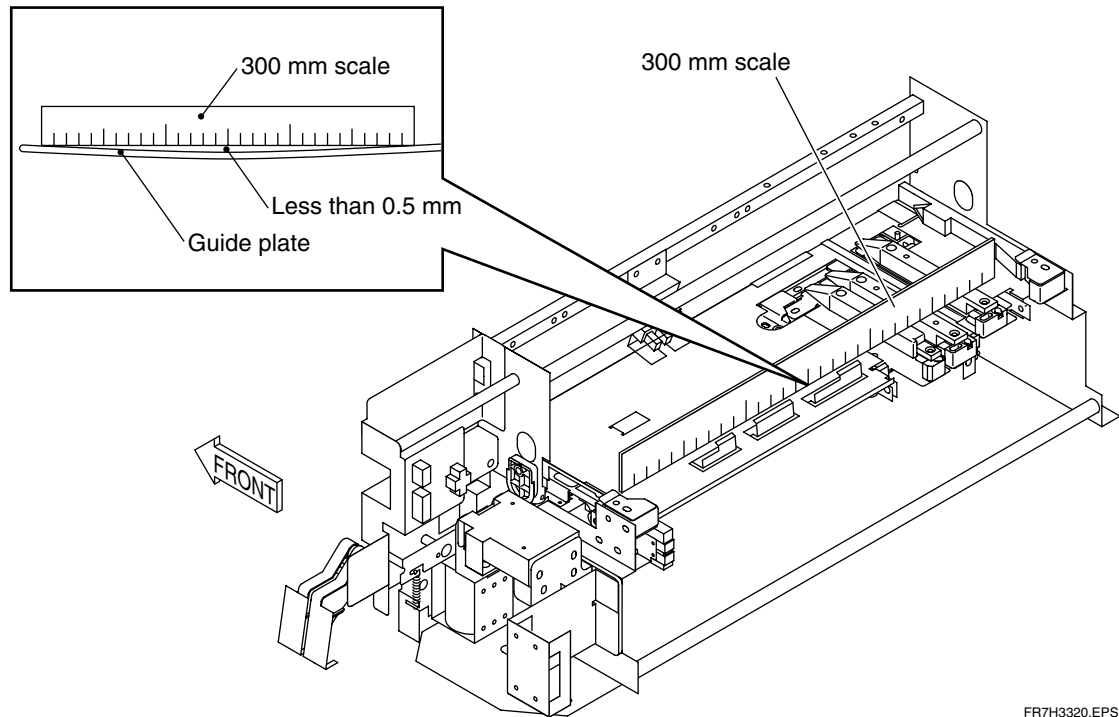
## ■ Installation procedure

### ◆ NOTE ◆

- When installing the claw guide assembly, adjust the degree of guide plate parallelism with the mounting screws (BR4x8, x2) loosened.  
For parallelism adjustment purposes, apply a 300 mm scale to the guide plate trailing end (toward the IP removal unit) and measure the gap between the scale and guide plate.

0.5 mm or greater gap = NG

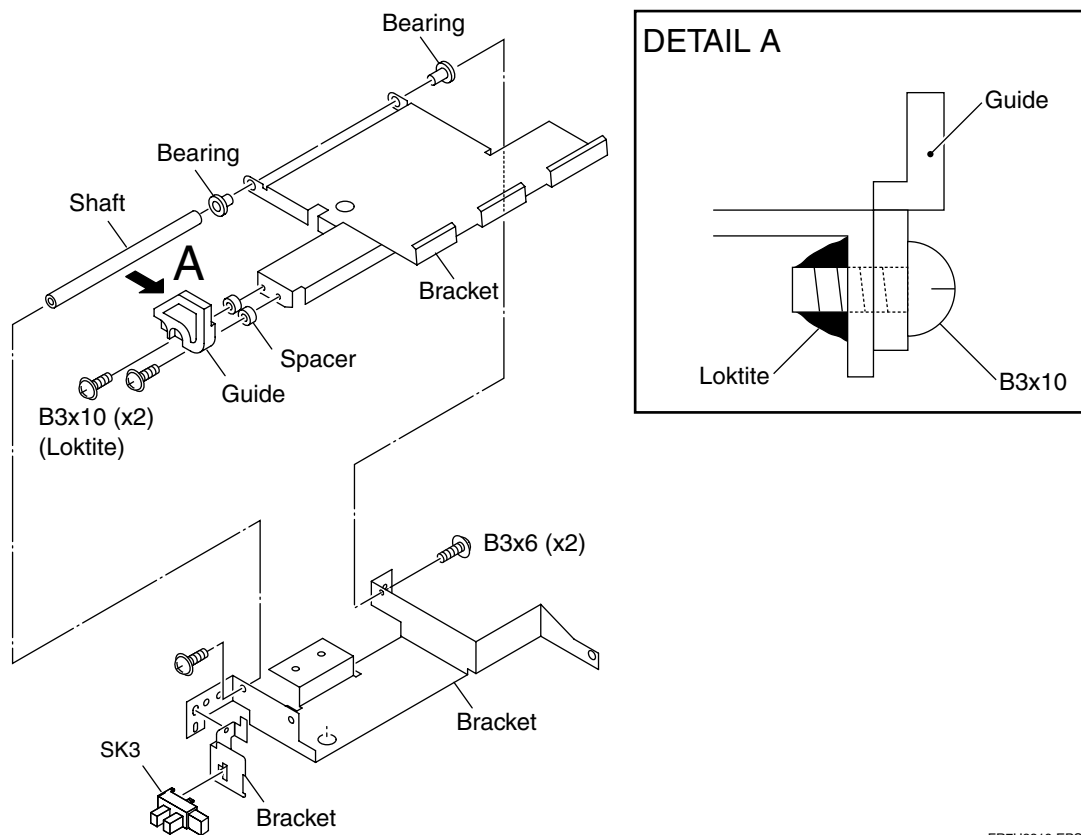
Gap smaller than 0.5 mm = OK



FR7H3320.EPS

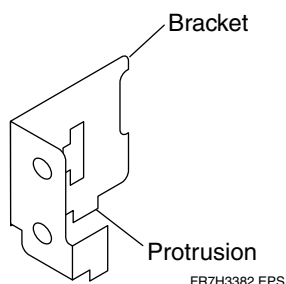
# ◆ NOTES ◆

- When applying Loktite to a guide screw, apply it to the portion of the guide screw on the bracket side. Do not bring Loktite into contact with the guide.



FR7H3319.EPS

- When installing the SK3 bracket, align it with the dowels and secure it while pressing the protrusion upward.

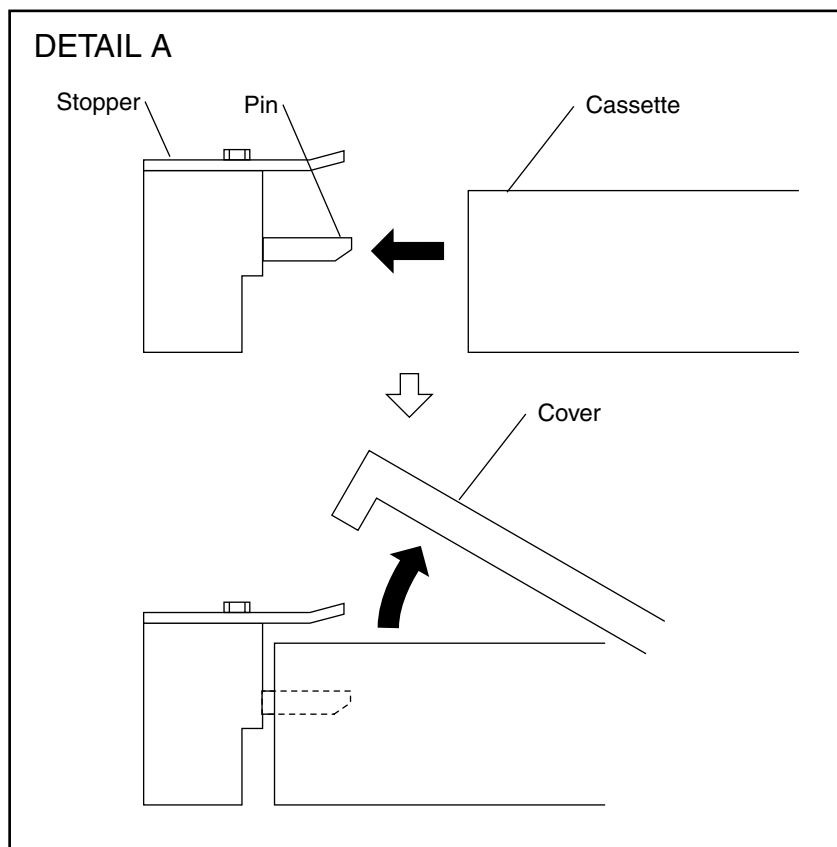
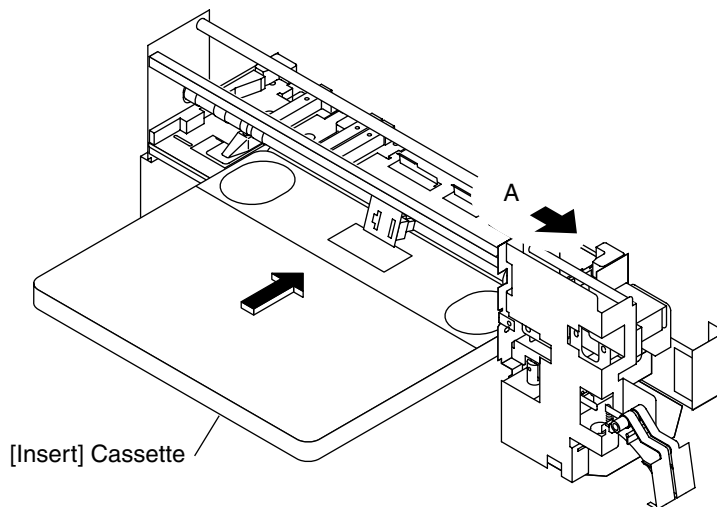


FR7H3382.EPS

To accomplish installation, reverse the removal procedure.

## ■ Check procedure

- Insert a cassette into the cassette set unit to check that the stopper pin opens the cassette cover. If the cassette cover does not open, adjust the parallelism of the installed guide plate.

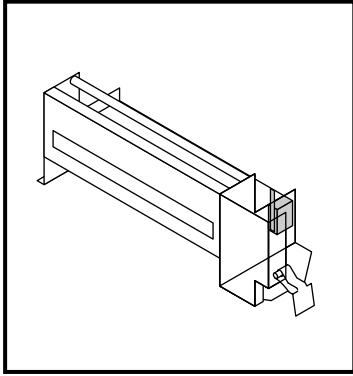


FR7H3390.EPS

- Make sure that the coil spring inside the claw guide assembly is engaged with the dowels.

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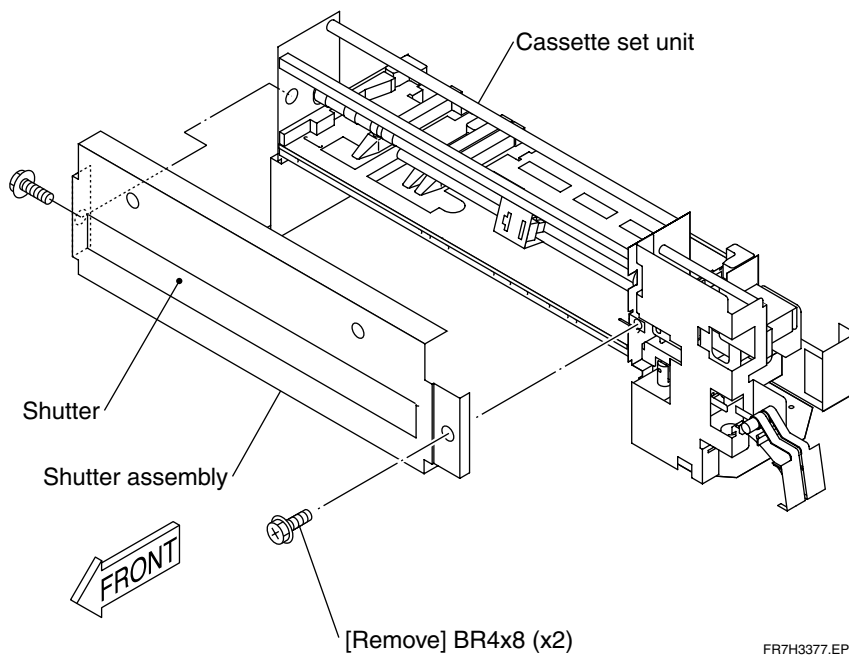
## 4.9 Cassette IN Sensor (SK2)



FR7H3009.EPS

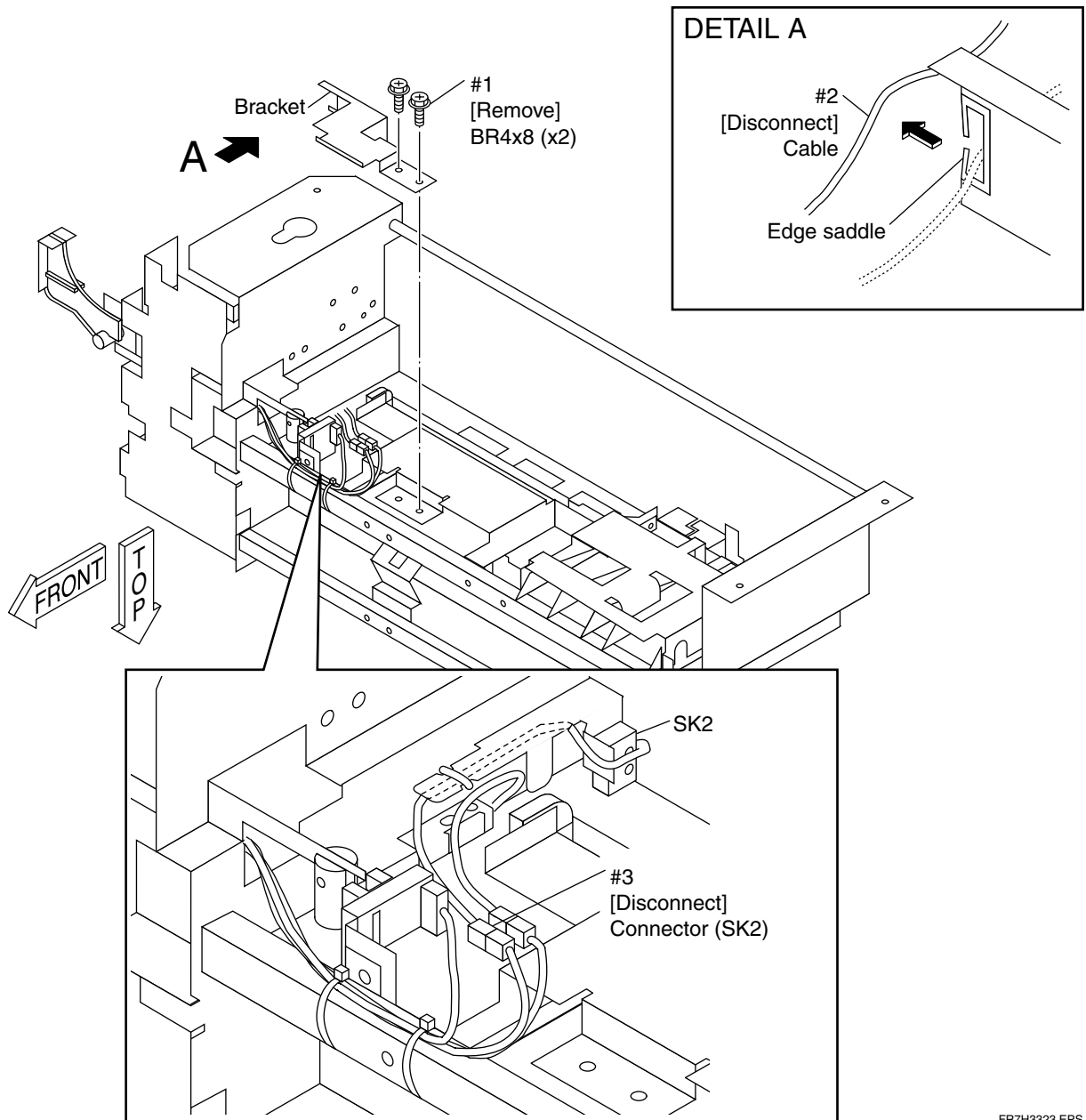
### ■ Removal procedure

- (1) Remove the cassette set unit.  
☞ “4.1 Cassette Set Unit”
- (2) Remove the shutter assembly.



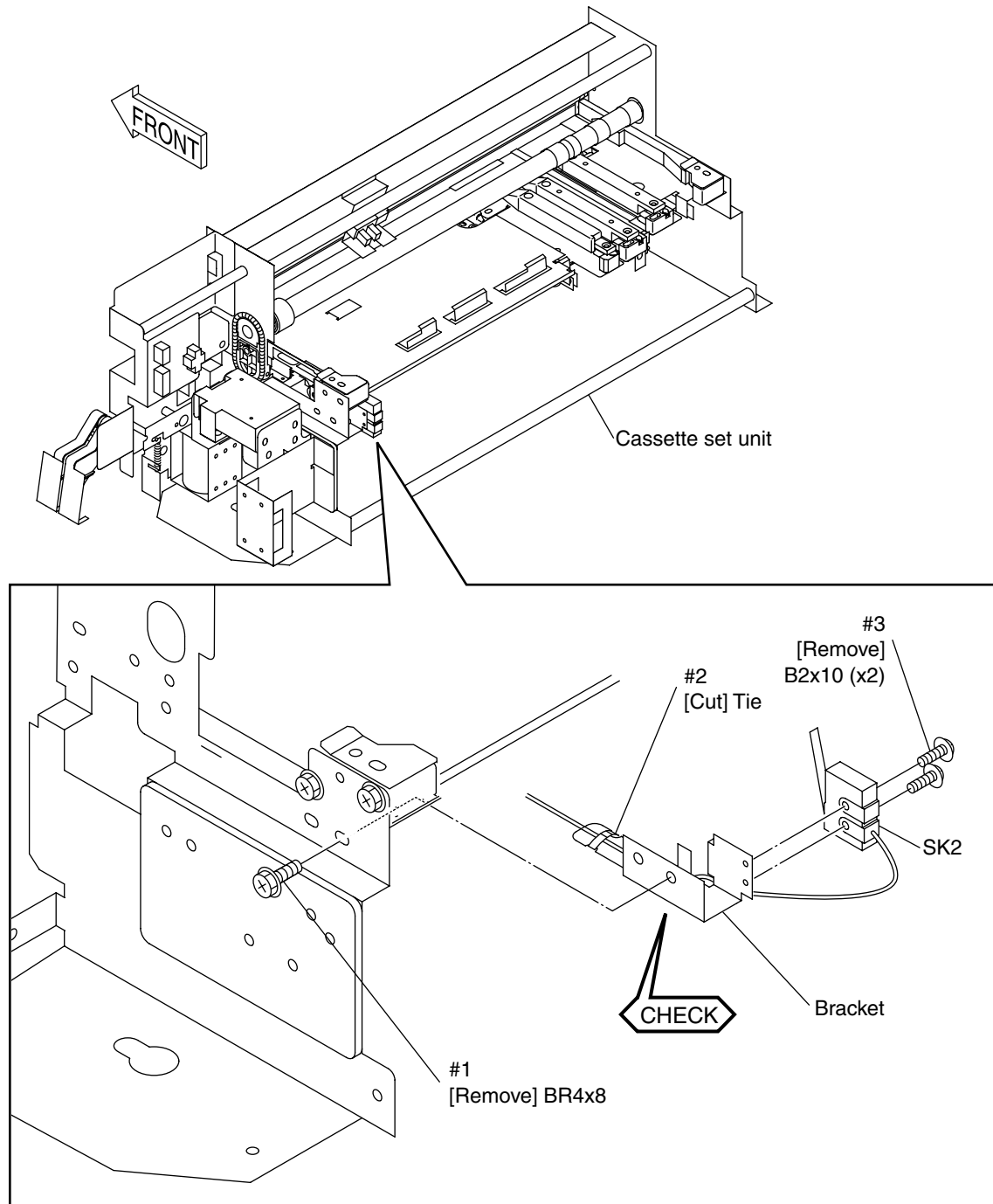
FR7H3377.EPS

(3) Disconnect the connector (SK2).



FR7H3323.EPS

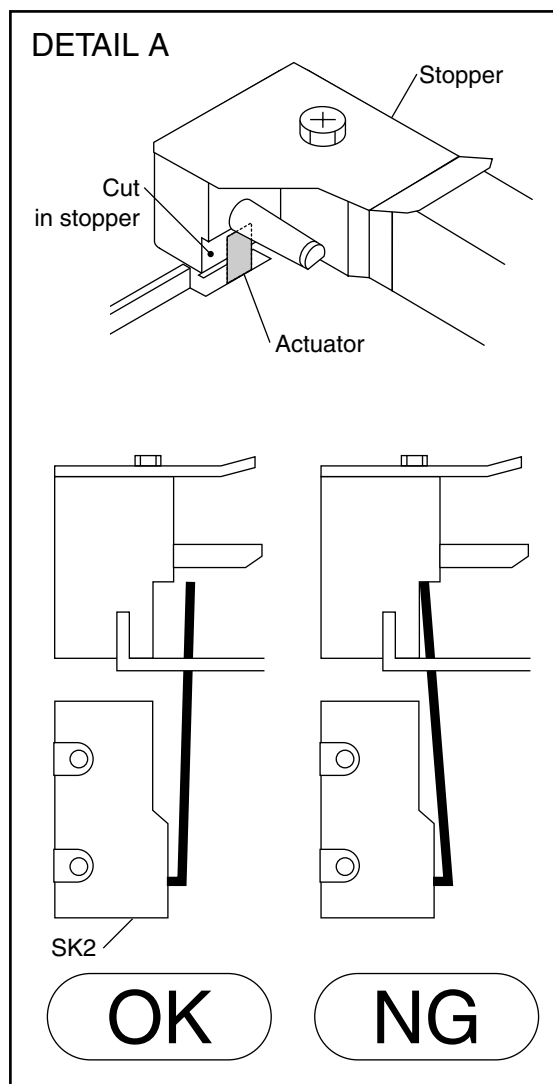
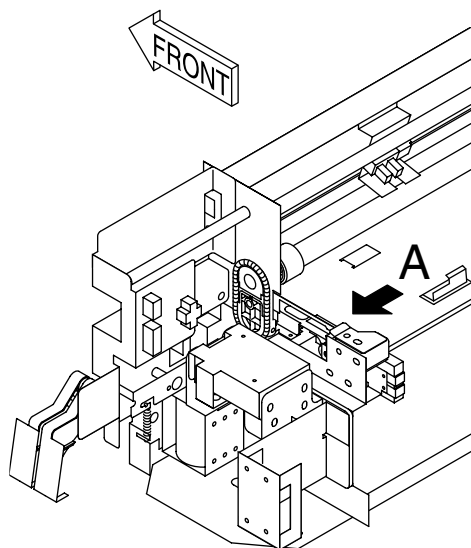
(4) Remove the cassette IN sensor (SK2).



FR7H3322.EPS

**■ Installation/adjustment procedure****◆ INSTRUCTION ◆**

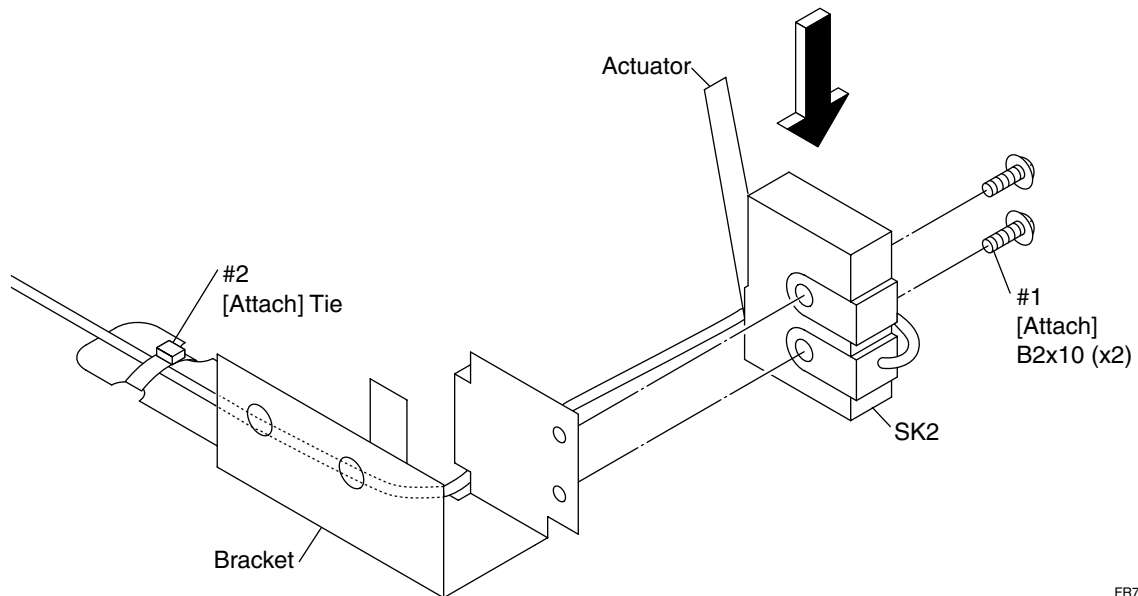
*The SK2 must be positioned so that the actuator does not interfere with the cut in the stopper.*



FR7H3324.EPS



(1) Mount the SK2 on the bracket.



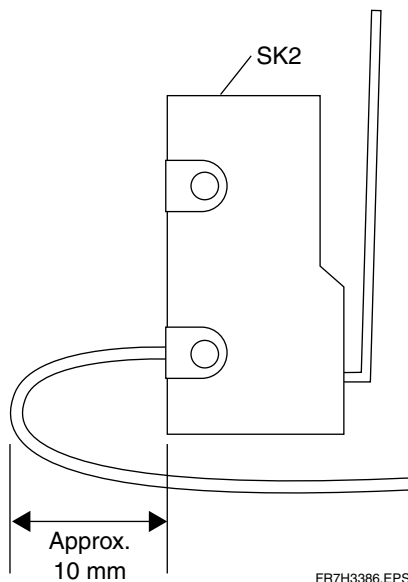
FR7H3325.EPS

◆ **NOTE** ◆

*When mounting the SK2 assembly, do not allow the actuator to come into contact with neighboring parts and bend. If the actuator is bent, it does not normally function.*

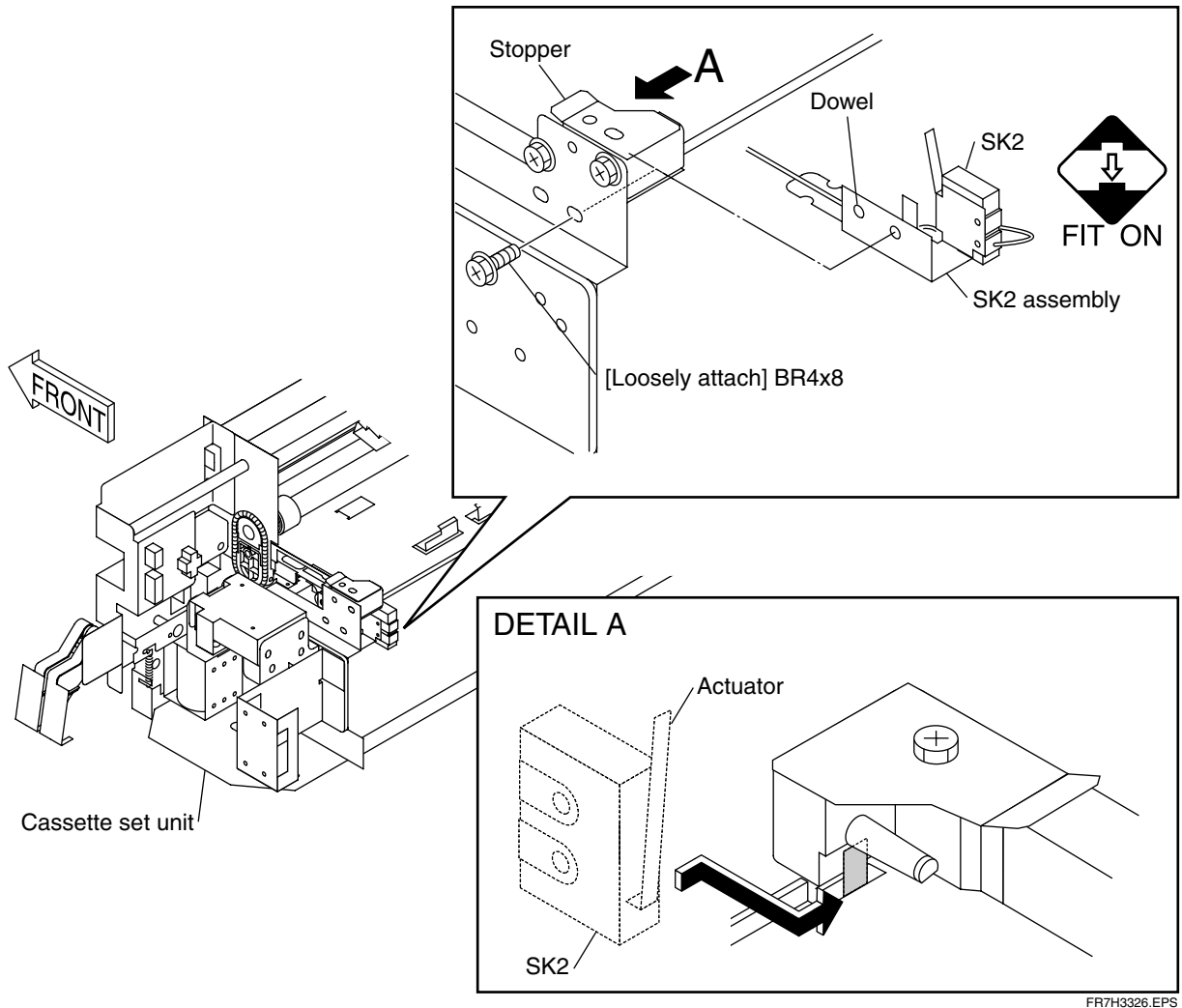
◇ **REFERENCE** ◇

*Ensure that the SK2 connector cable does not come into contact with the IP removal unit.*



FR7H3386.EPS

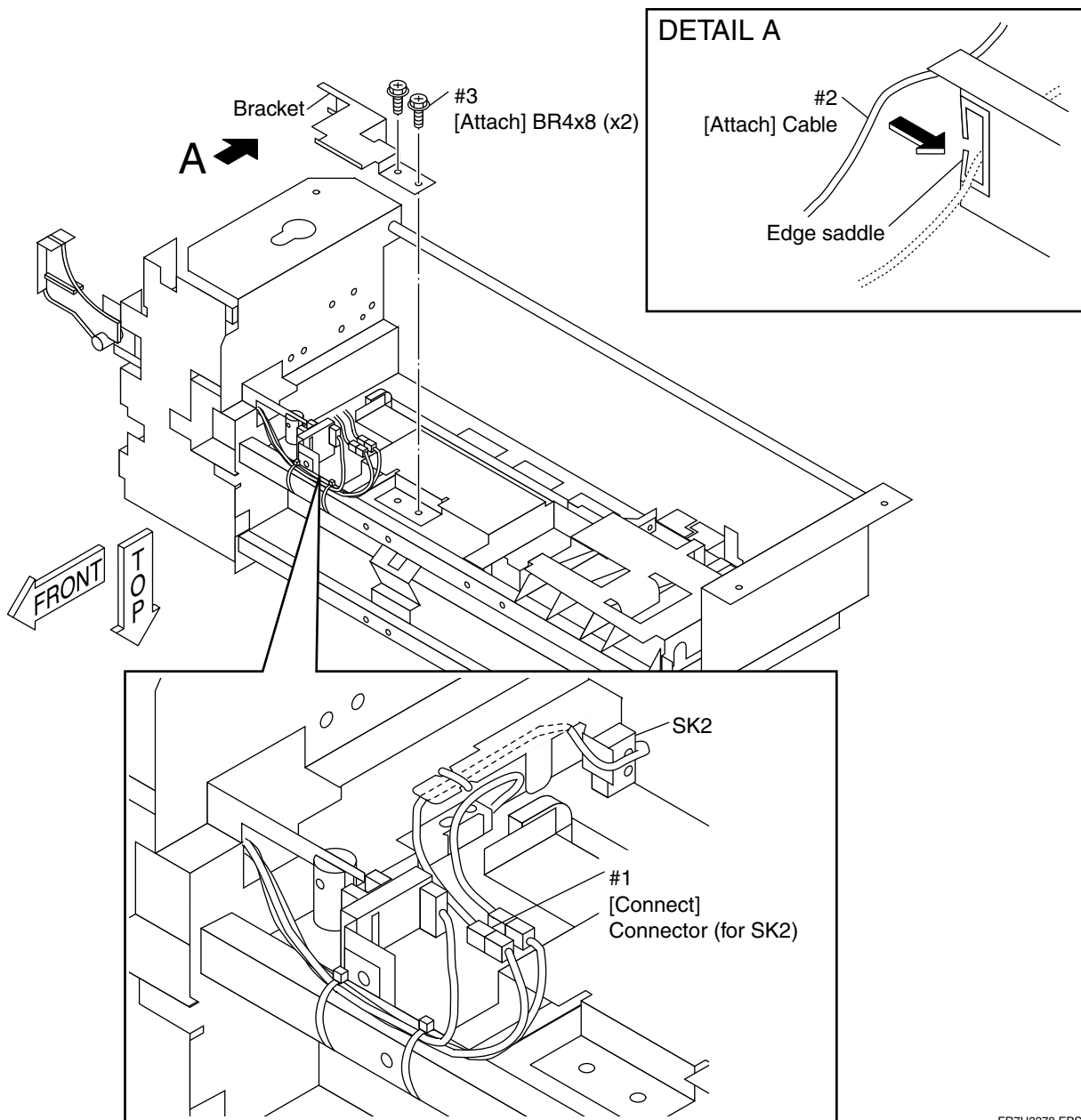
(2) Loosely attach the SK2 assembly.



(3) Connect the SK2 connector.

◆ **NOTE** ◆

*Make sure that the connector cable is not positioned outside the bracket.*

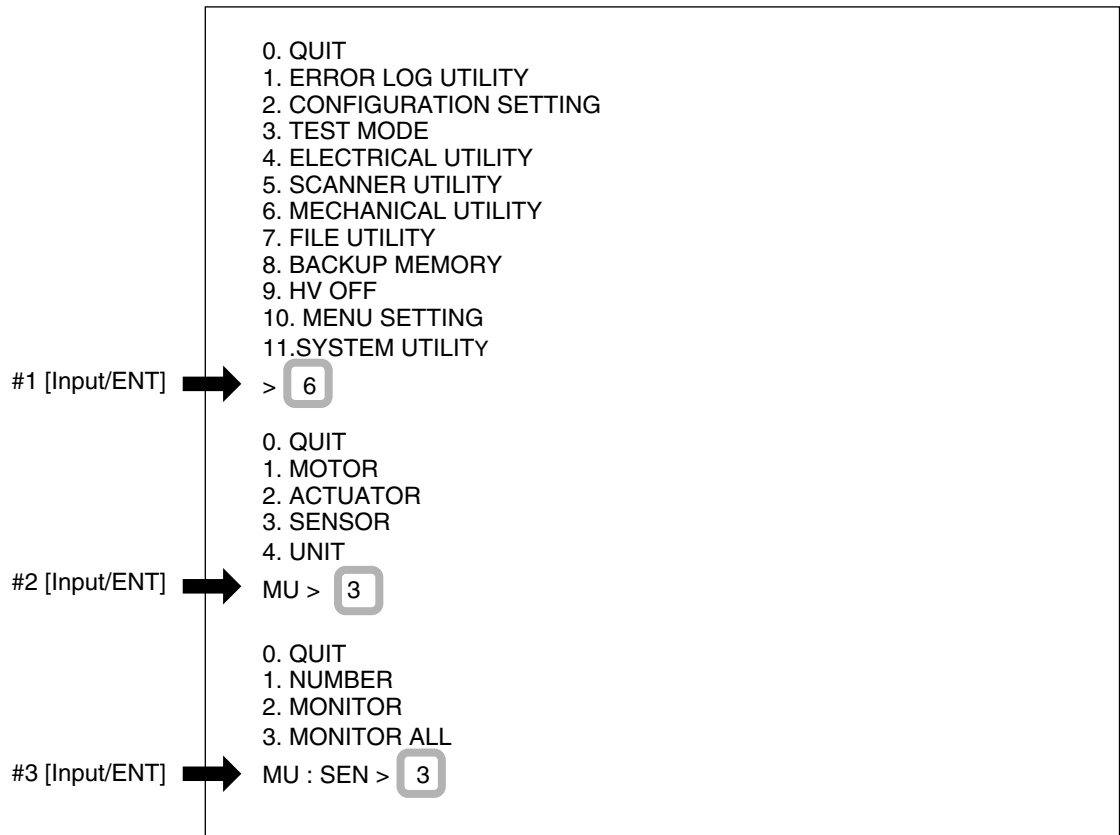


FR7H3378.EPS

(4) To complete installation, reverse the removal procedure.

## ■ Check procedure

- (1) Turn ON the power.
- (2) Start the M-Utility.
- (3) Perform SK2 operational checkout.



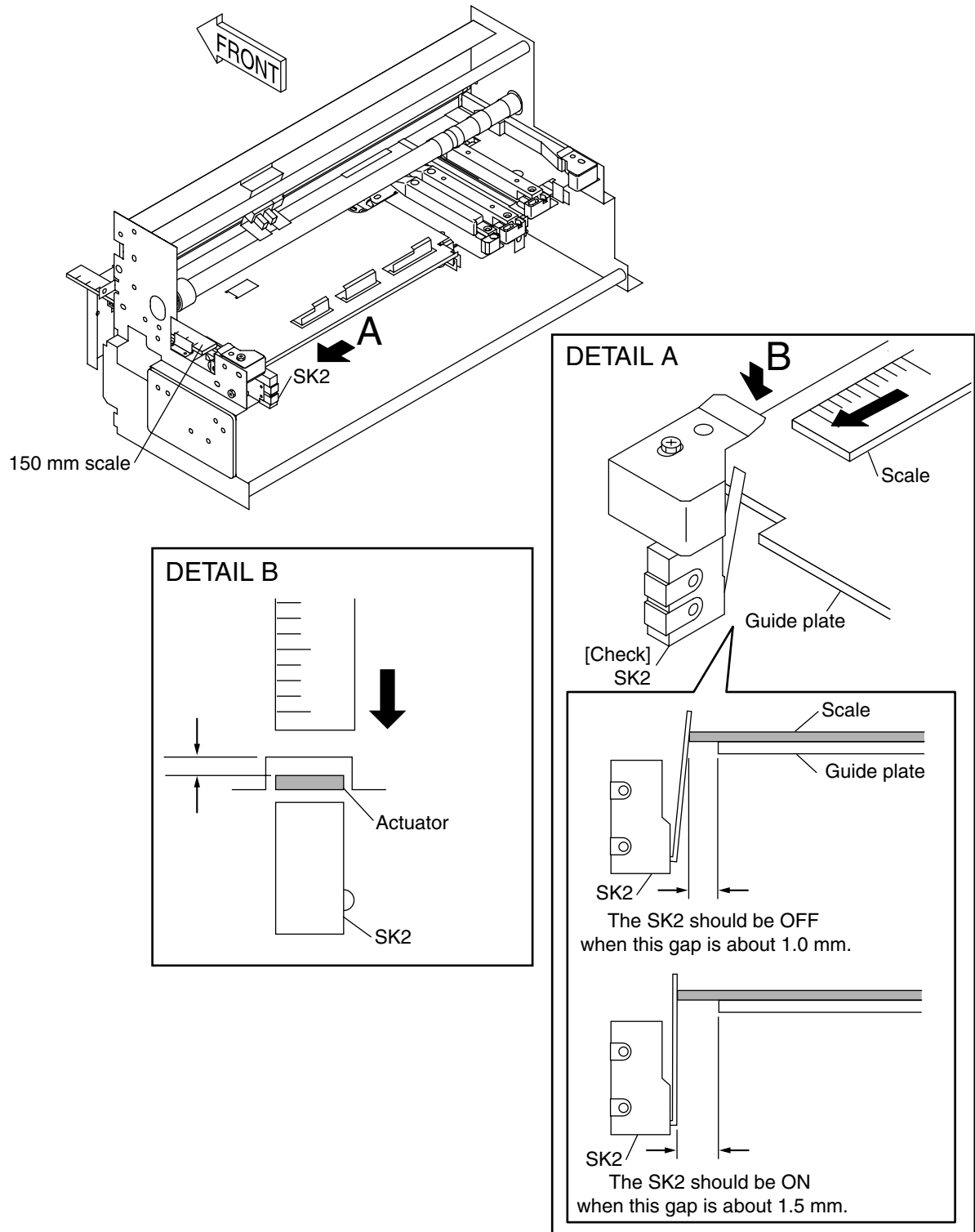
FR7H3330.EPS

## ◇ REFERENCE ◇

*For SK2 operational checkout, perform the following steps:*

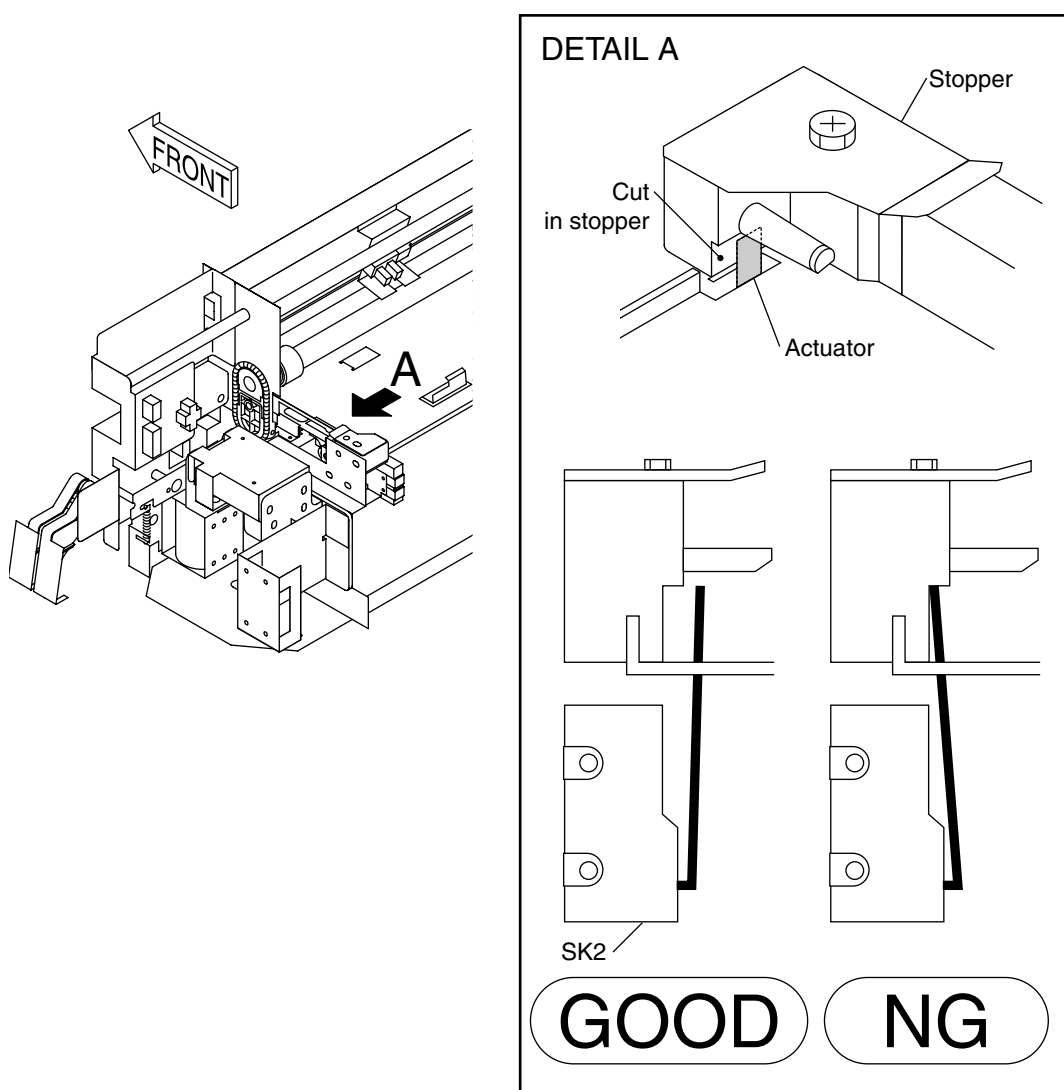
1. *Insert a cassette all the way into the cassette set unit.*  
→ *Check that the SK2 closes.*
2. *Try to pull the cassette while it is locked with the hold pin.*  
→ *Check that the SK2 remains closed.*
3. *Remove the cassette.*  
→ *Check that the SK2 opens.*

(4) Verify the SK2 assembly mounting position.



FR7H3379.EPS

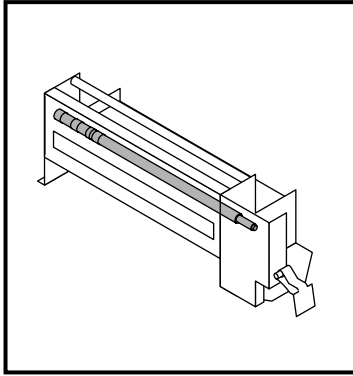
- (5) Press the actuator with a scale or the like to check that the actuator does not interfere with the cut in the stopper.



FR7H3328.EPS

- (6) Exit the M-Utility.
- (7) Turn OFF the power.

## 4.10 Rubber Roller



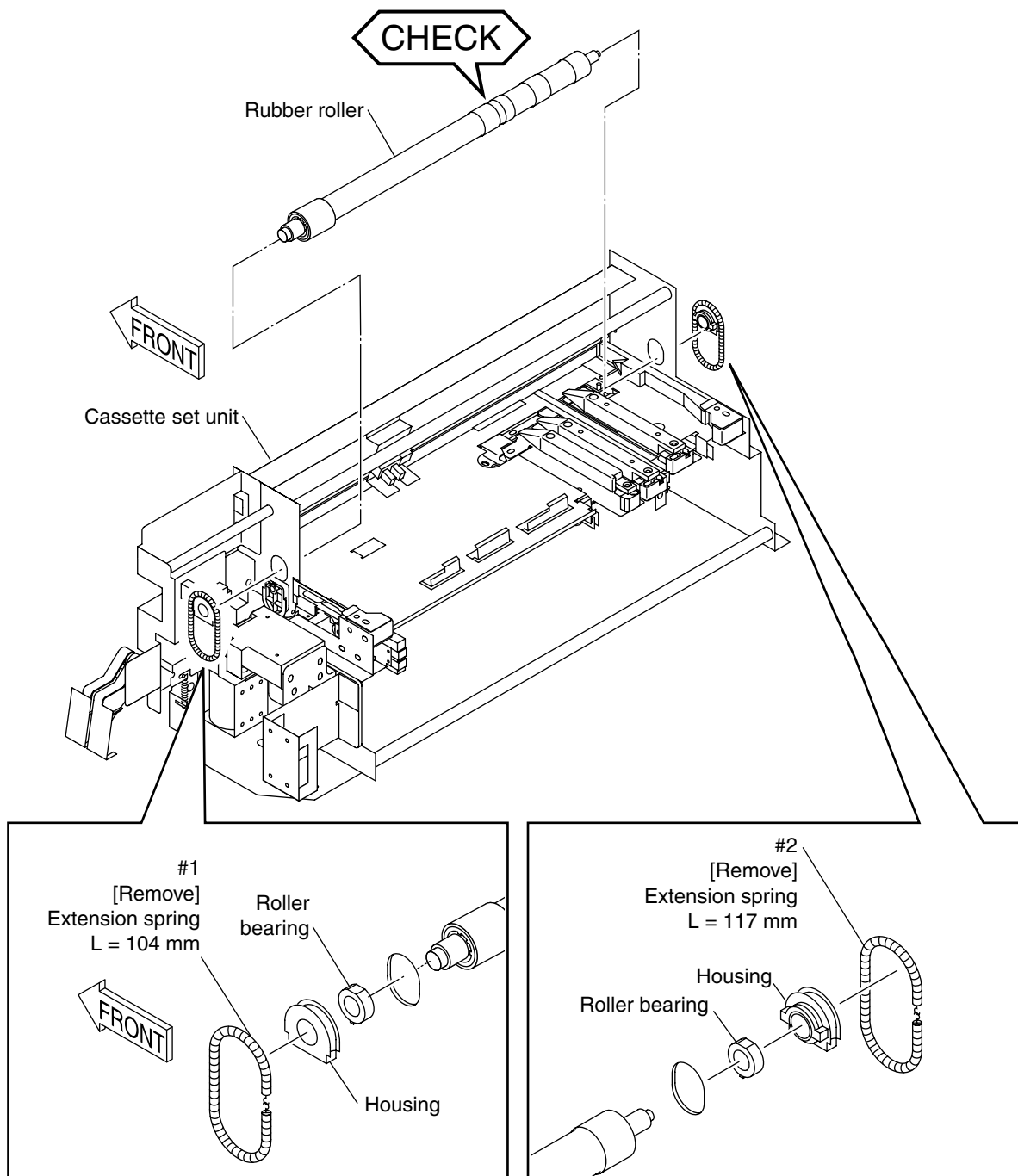
FR7H3011.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.

☞ “4.1 Cassette Set Unit”

(2) Remove the rubber roller.



FR7H3333.EPS

## ■ Installation procedure

### ◆ INSTRUCTION ◆

*The extension spring size varies with the mounting location. Pay due attention to the extension spring mounting location.*

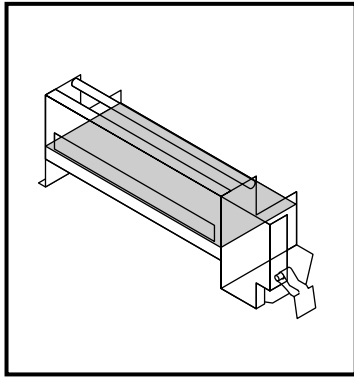
To accomplish installation, reverse the removal procedure.

## ■ Check procedure

Check that the rubber roller is not installed with right and left reversed.



## 4.11 Guide Plate



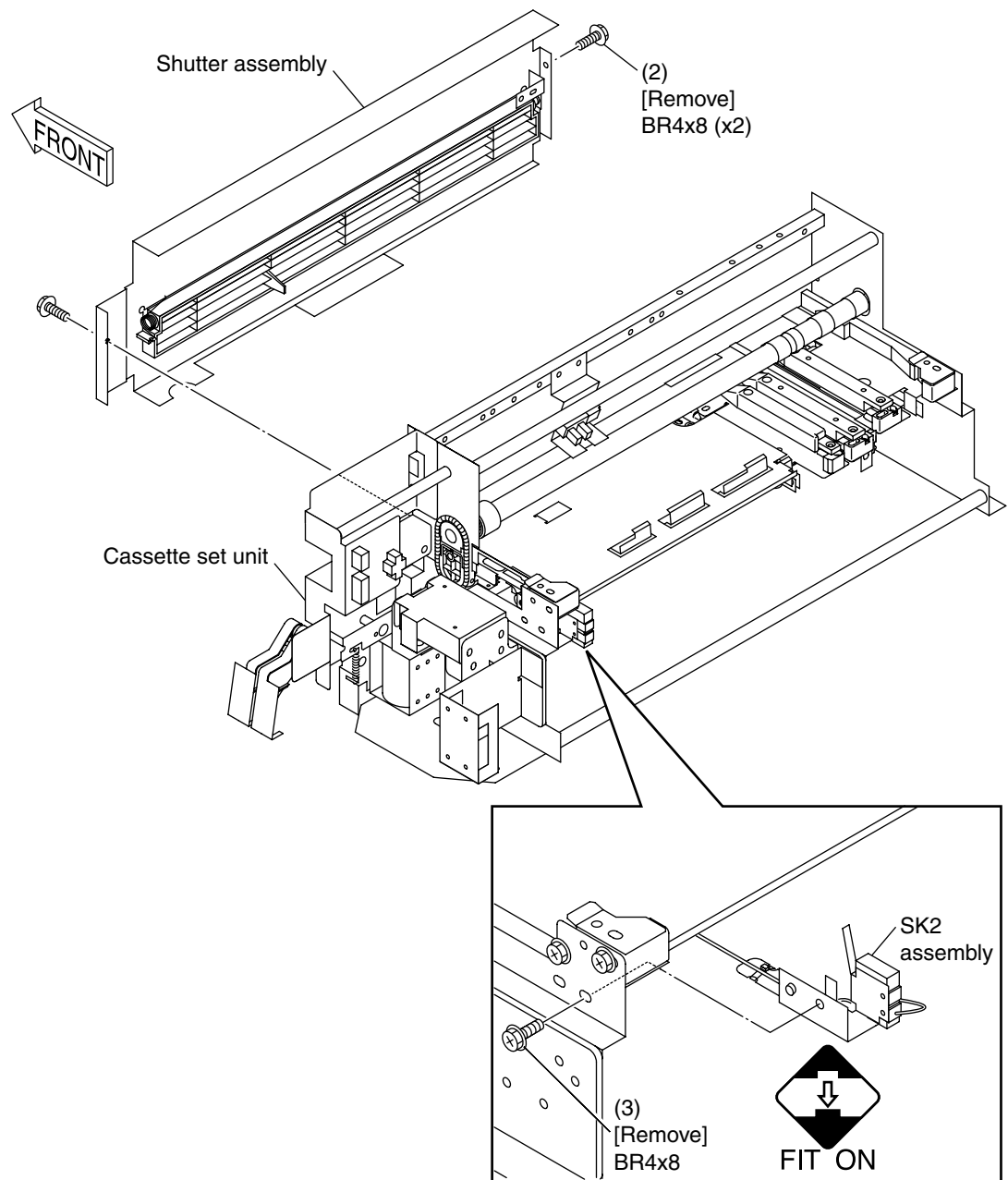
FR7H3012.EPS

### ■ Removal procedure

(1) Remove the rubber roller.

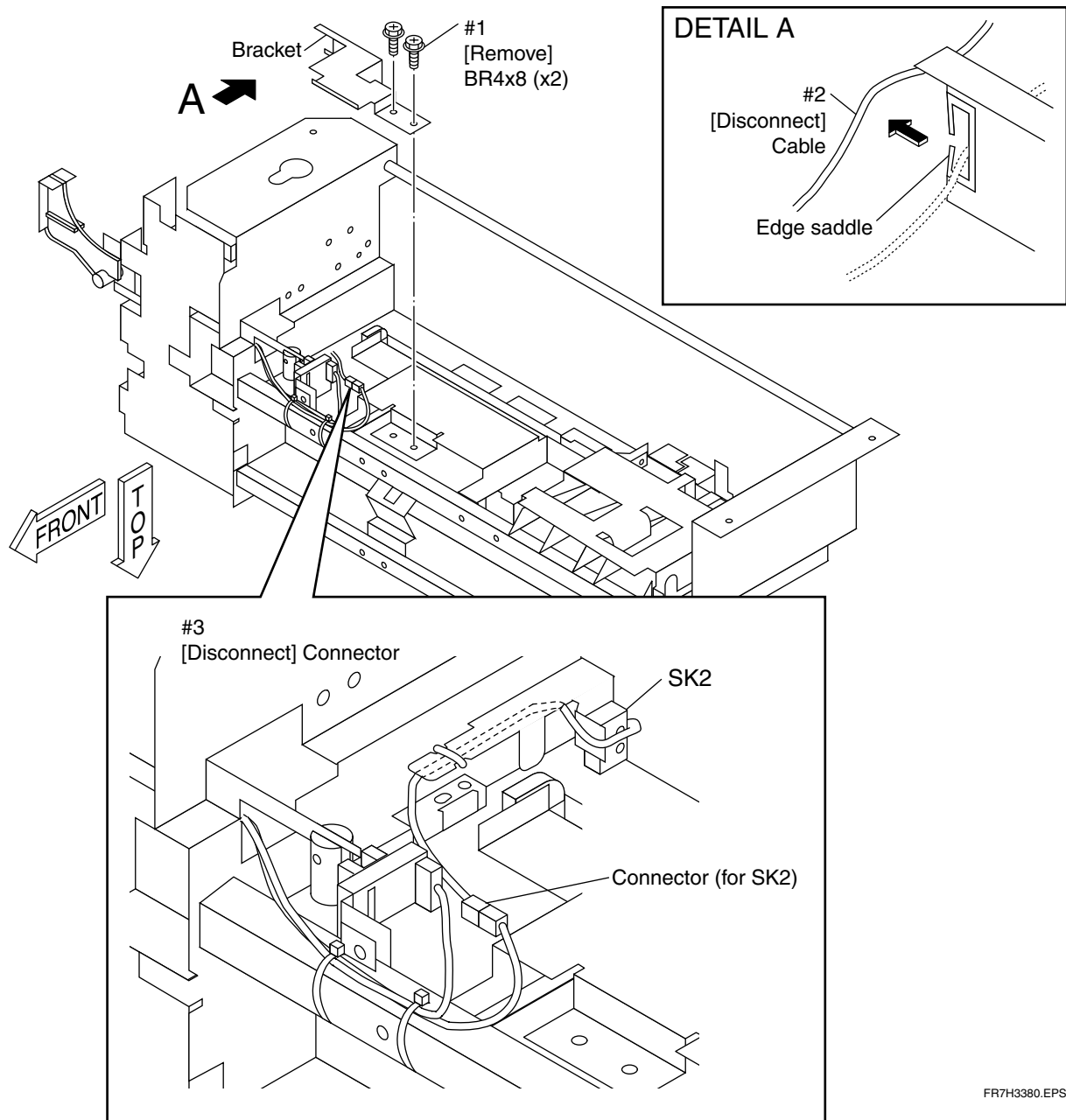
☞ “4.10 Rubber Roller”

- (2) Remove the shutter assembly.
- (3) Remove the sensor assembly (SK2).



FR7H3334.EPS

(4) Disconnect the SK2 connector.

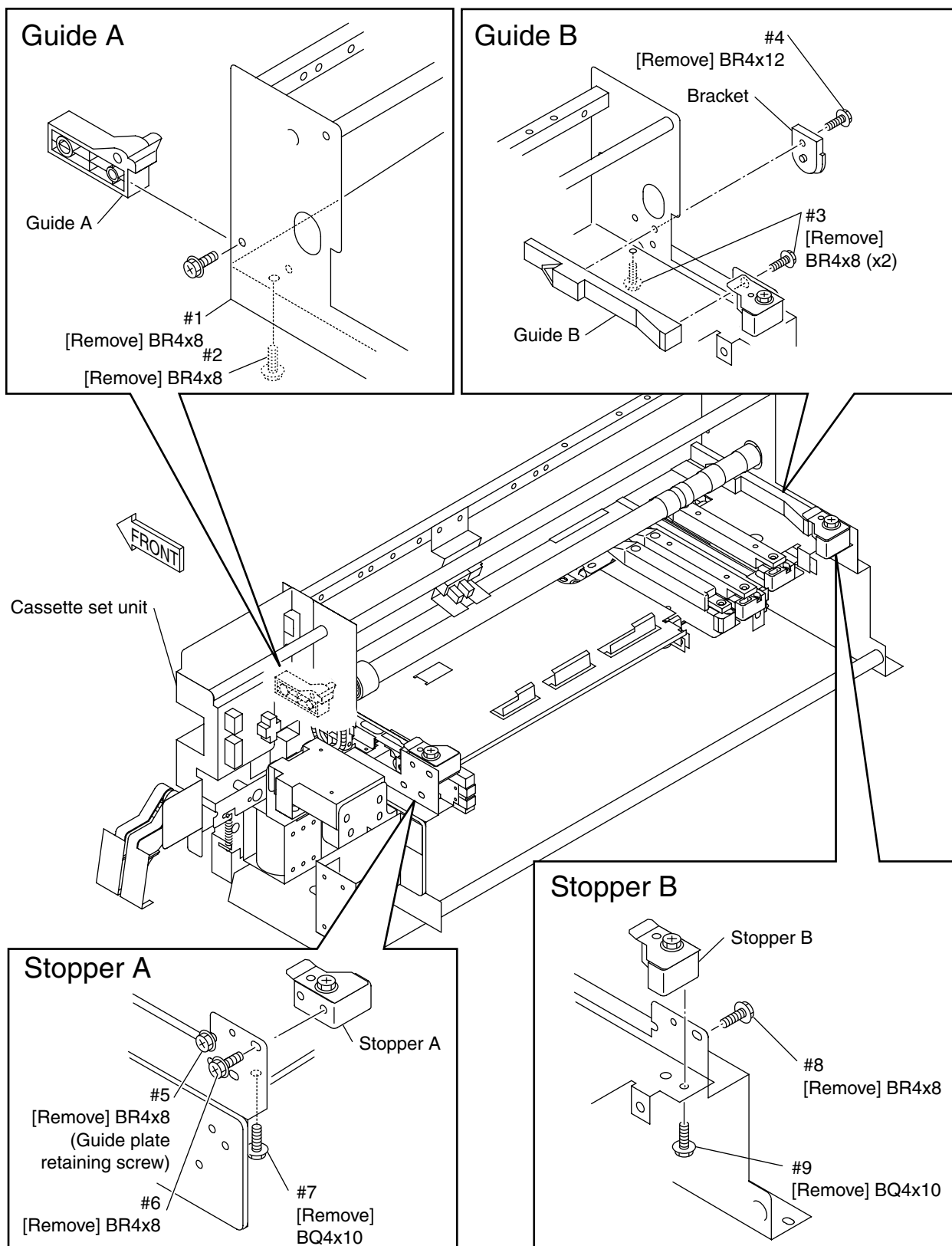


FR7H3380.EPS

(5) Remove the guides and stoppers.

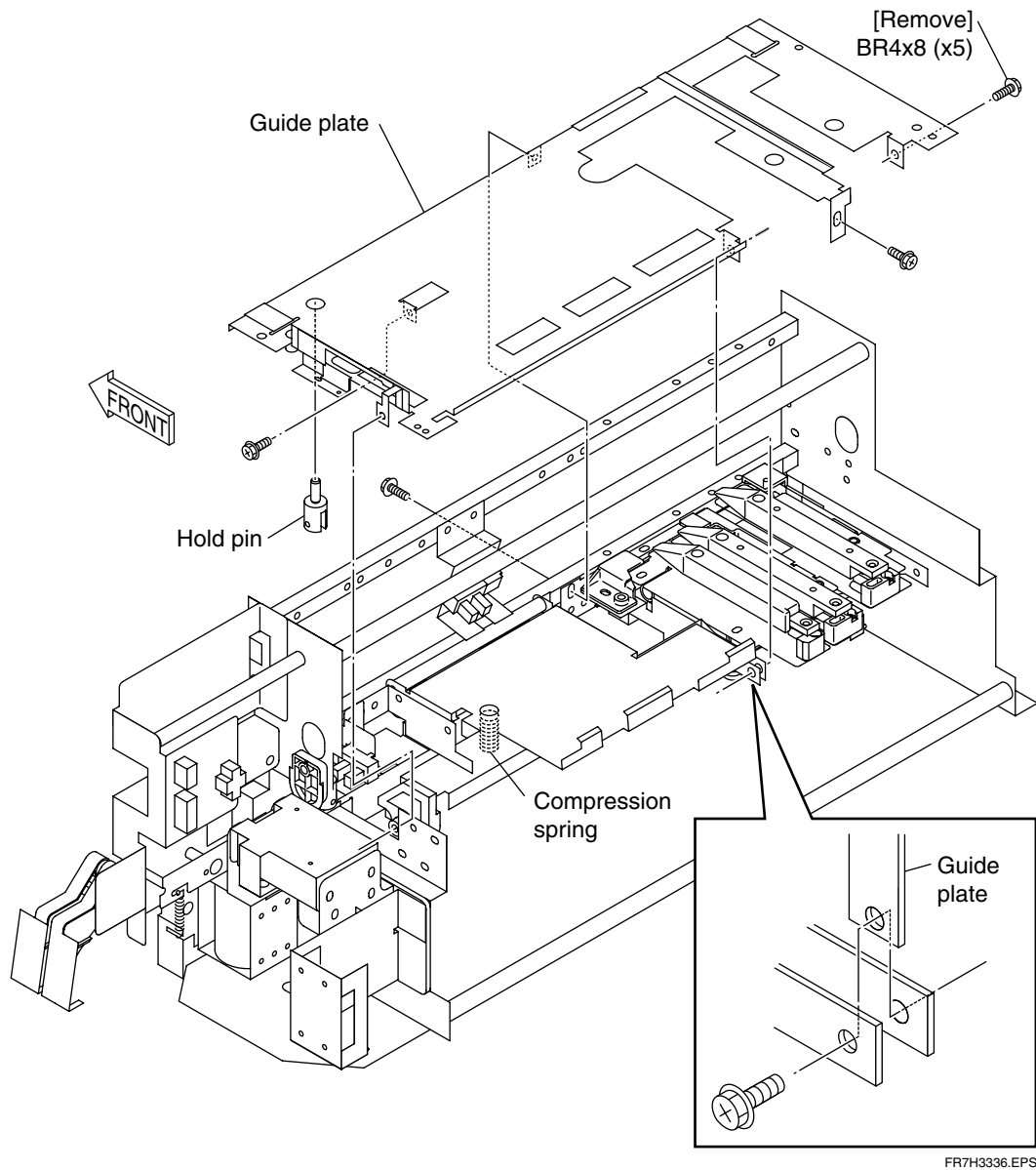
◇ **REFERENCE** ◇

*Stopper A is secured by a dowel on a side plate. To remove stopper A, it is necessary to remove the guide plate retaining screw.*



FR7H3335.EPS

(6) Remove the guide plate.



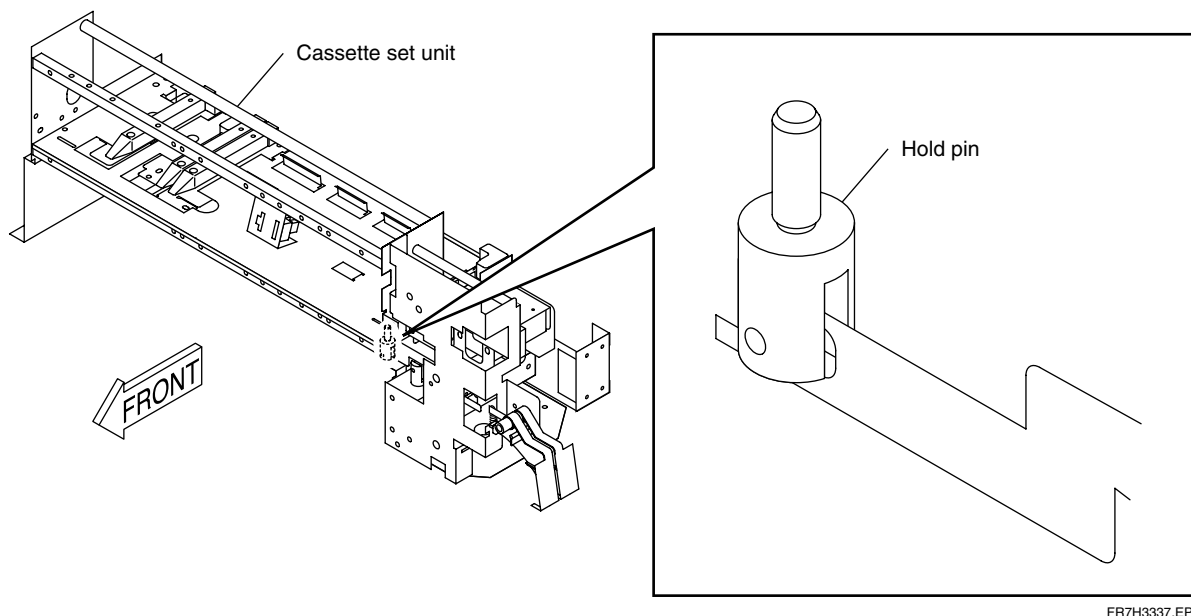
### ◇ REFERENCE ◇

*Removing the guide plate separates the compression spring from the hold pin.*

## ■ Installation procedure

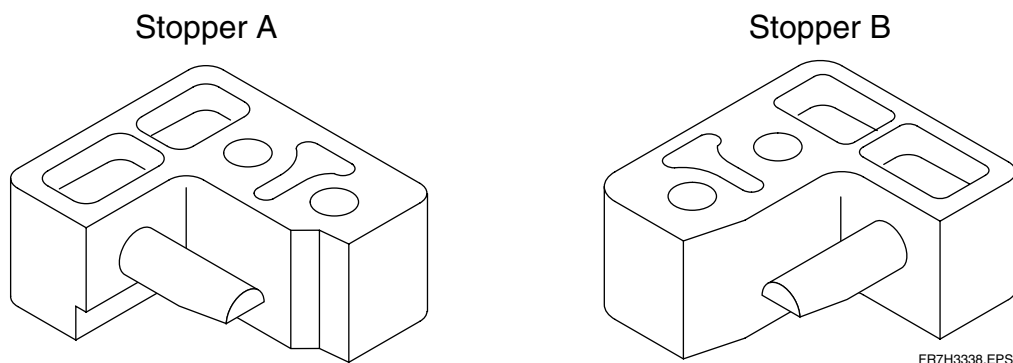
### ◆ INSTRUCTION ◆

*When installing the guide plate, mount the hold pin on the arm.*

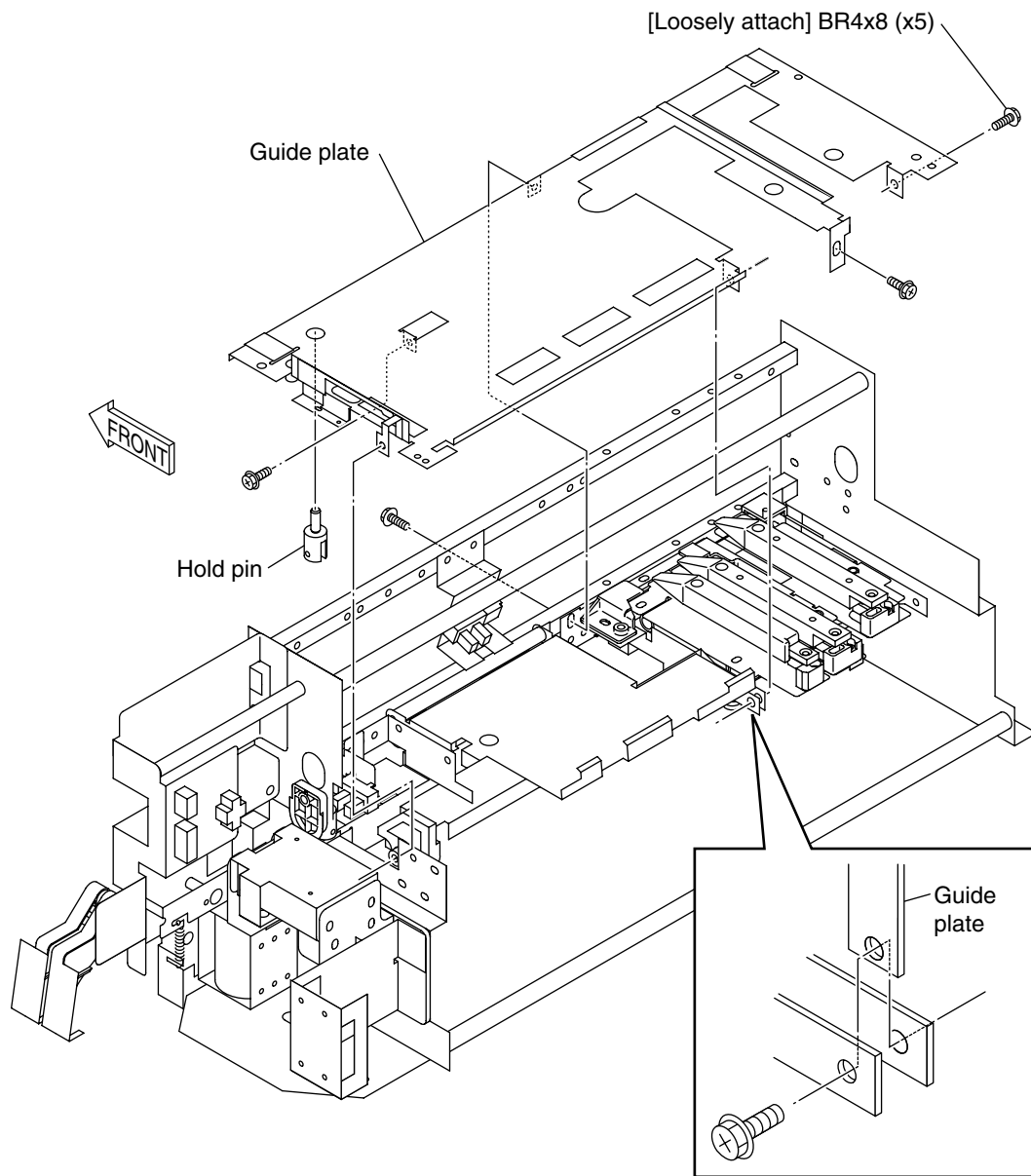


### ◇ REFERENCE ◇

*When installing stoppers A and B, verify their mounting positions. Note that stoppers A and B differ in shape.*

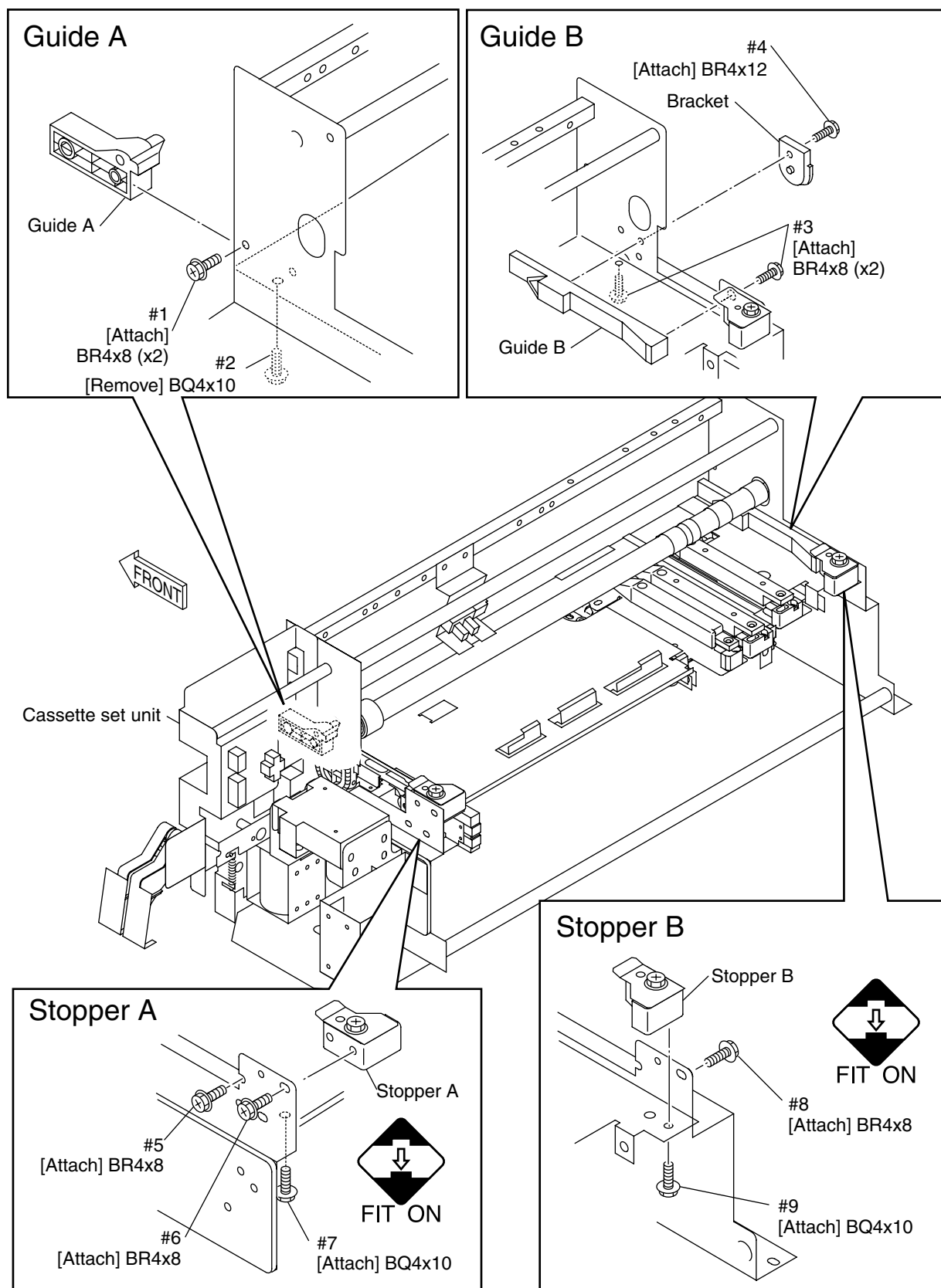


(1) Loosely attach the guide plate.



FR7H3339.EPS

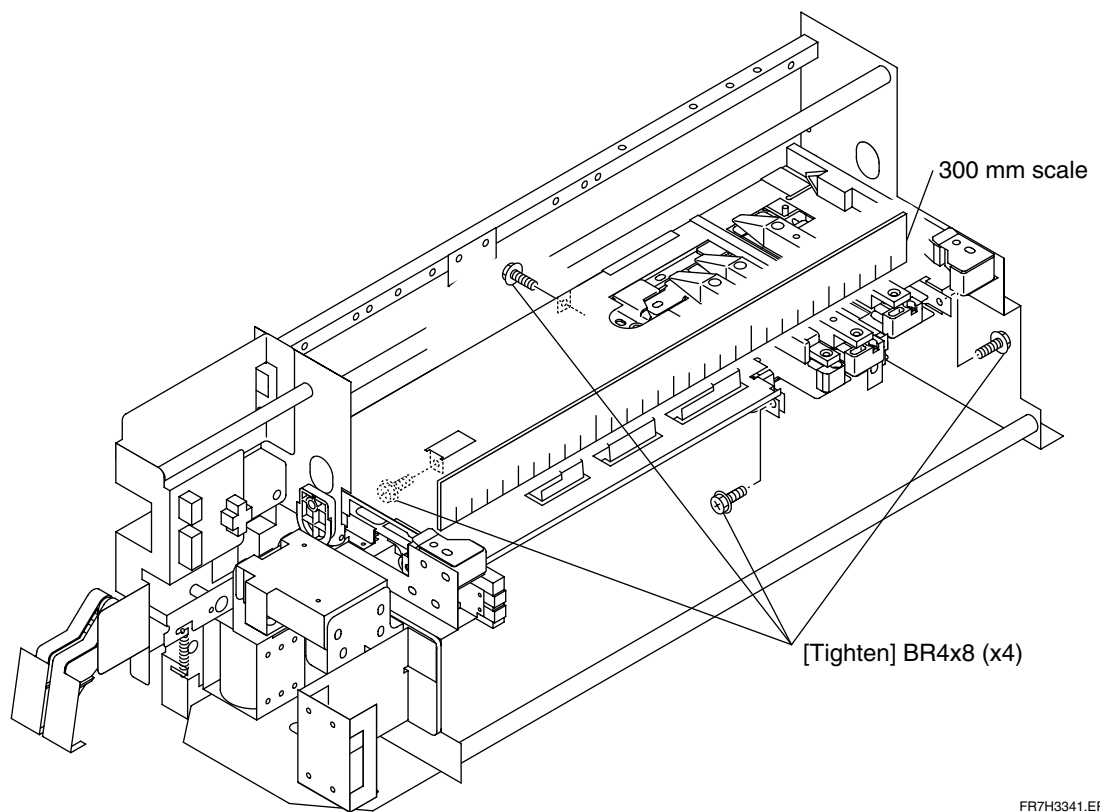
(2) Install the guides and stoppers.



FR7H3340.EPS



- (3) While measuring the levelness of the guide plate with a 300 mm scale or the like, tighten the remaining four guide plate retaining screws.

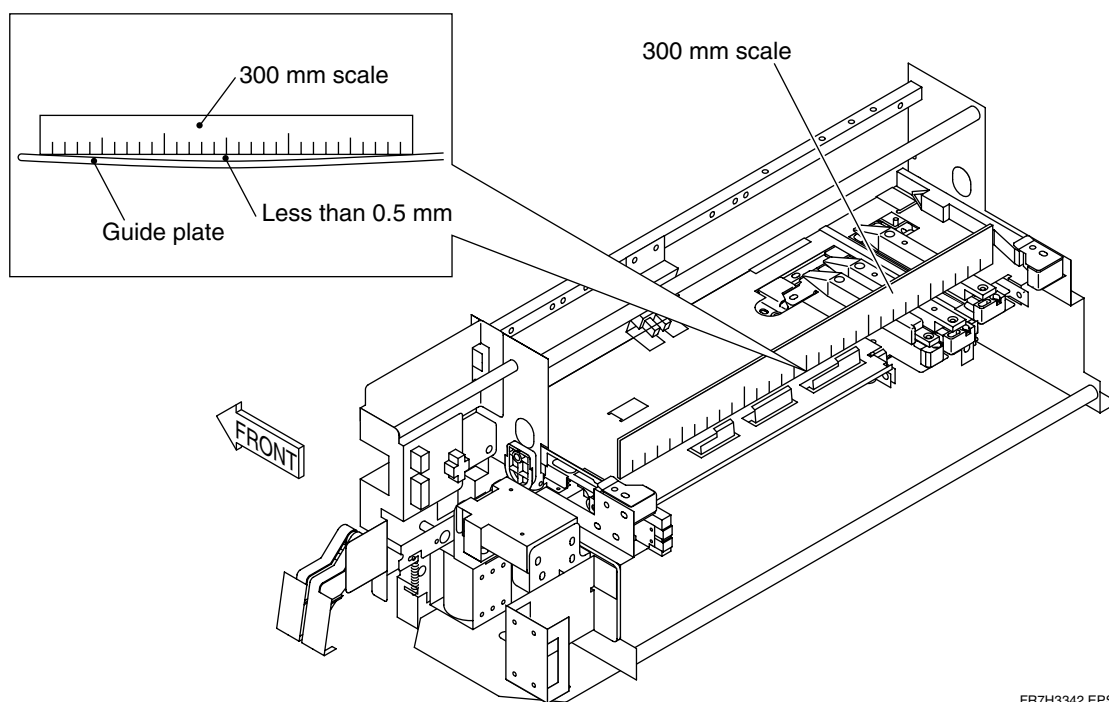


**◆ NOTE ◆**

*For parallelism adjustment purposes, apply a 300 mm scale to the guide plate trailing end (toward the IP removal unit) and measure the gap between the scale and guide plate.*

*0.5 mm or greater gap = NG*

*Gap smaller than 0.5 mm = OK*




FR7H3342.EPS

(4) Complete installation by reversing the removal procedure.

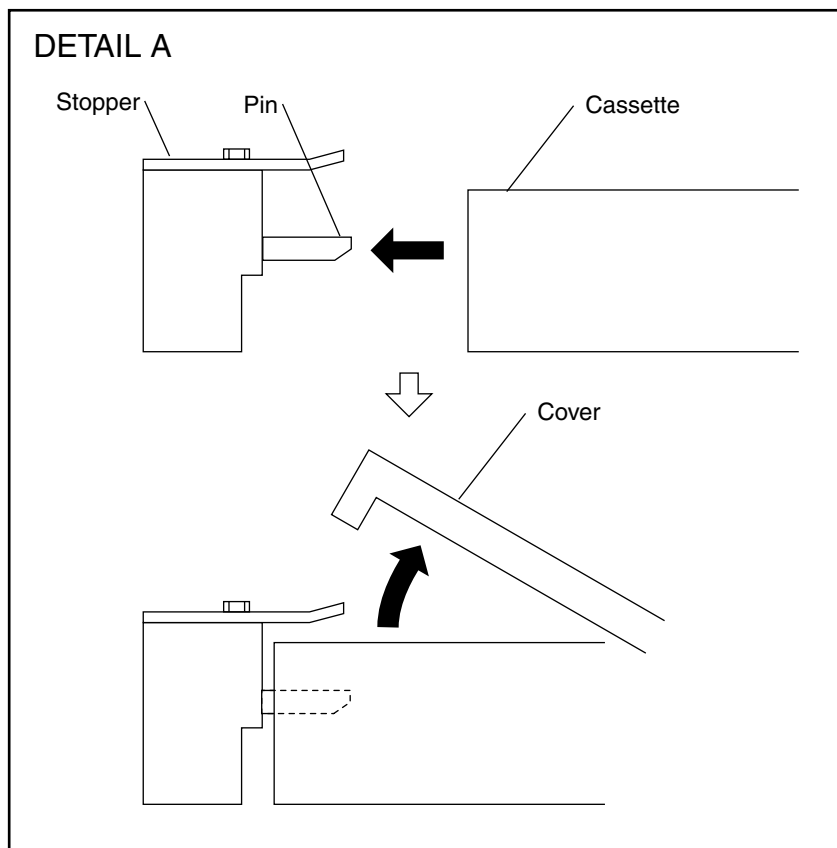
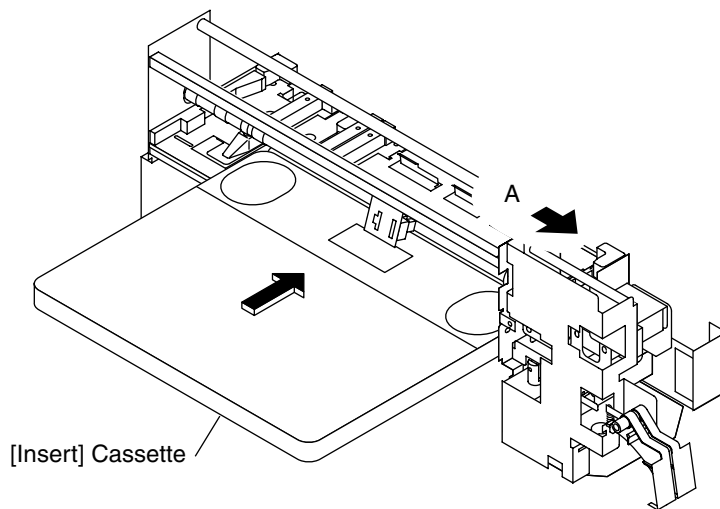
**◆ NOTE ◆**

*When installing the SK2 assembly, perform its specified adjustment procedure.*

 *"4.9 Cassette IN Sensor (SK2)"*

## ■ Check procedure

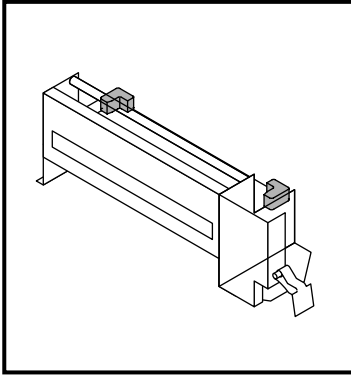
Insert a cassette into the cassette set unit to check that the stopper pin opens the cassette cover. If the cassette cover does not open, adjust the parallelism of the guide plate.



FR7H3381.EPS



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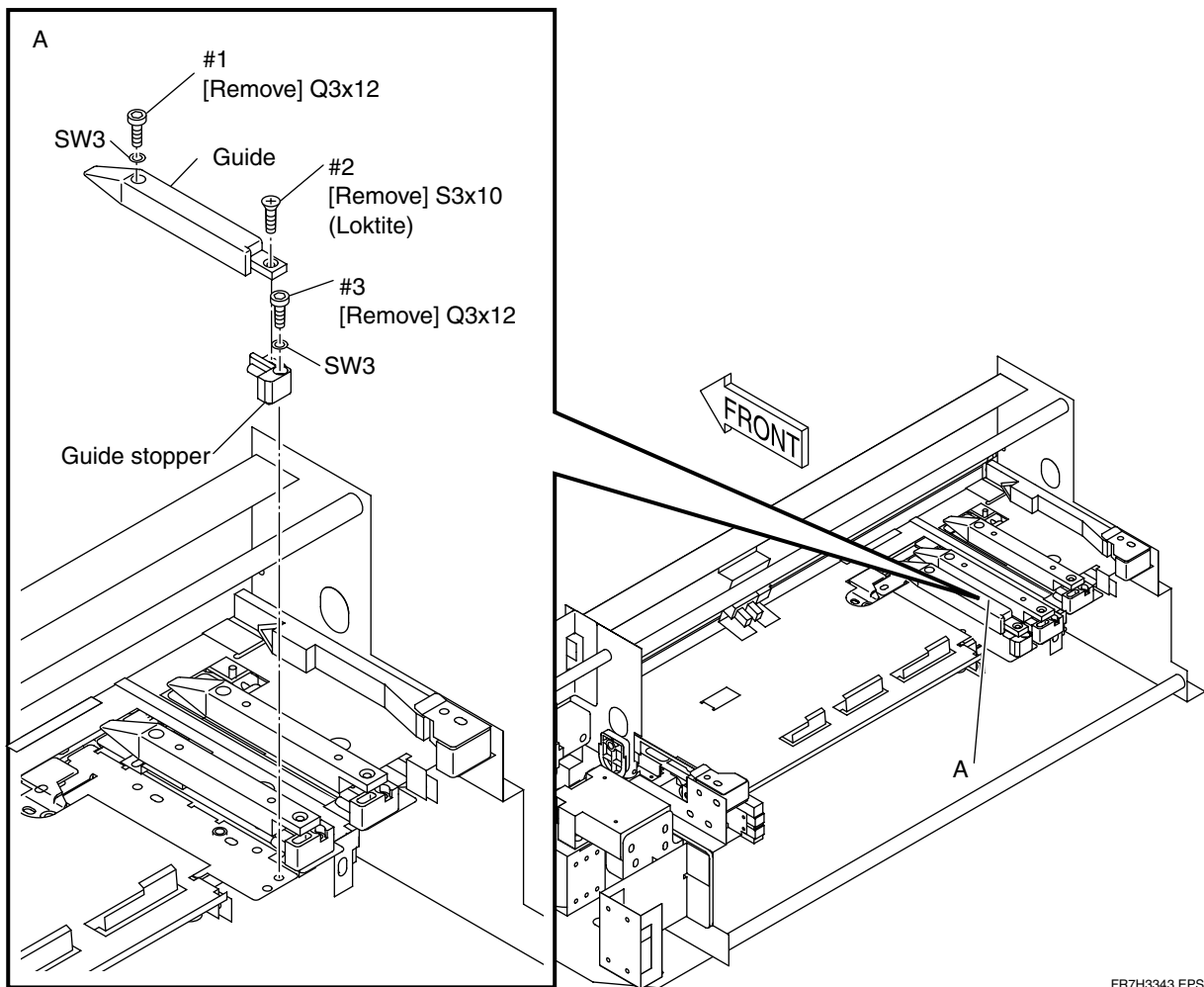
## 4.12 Guide Stoppers



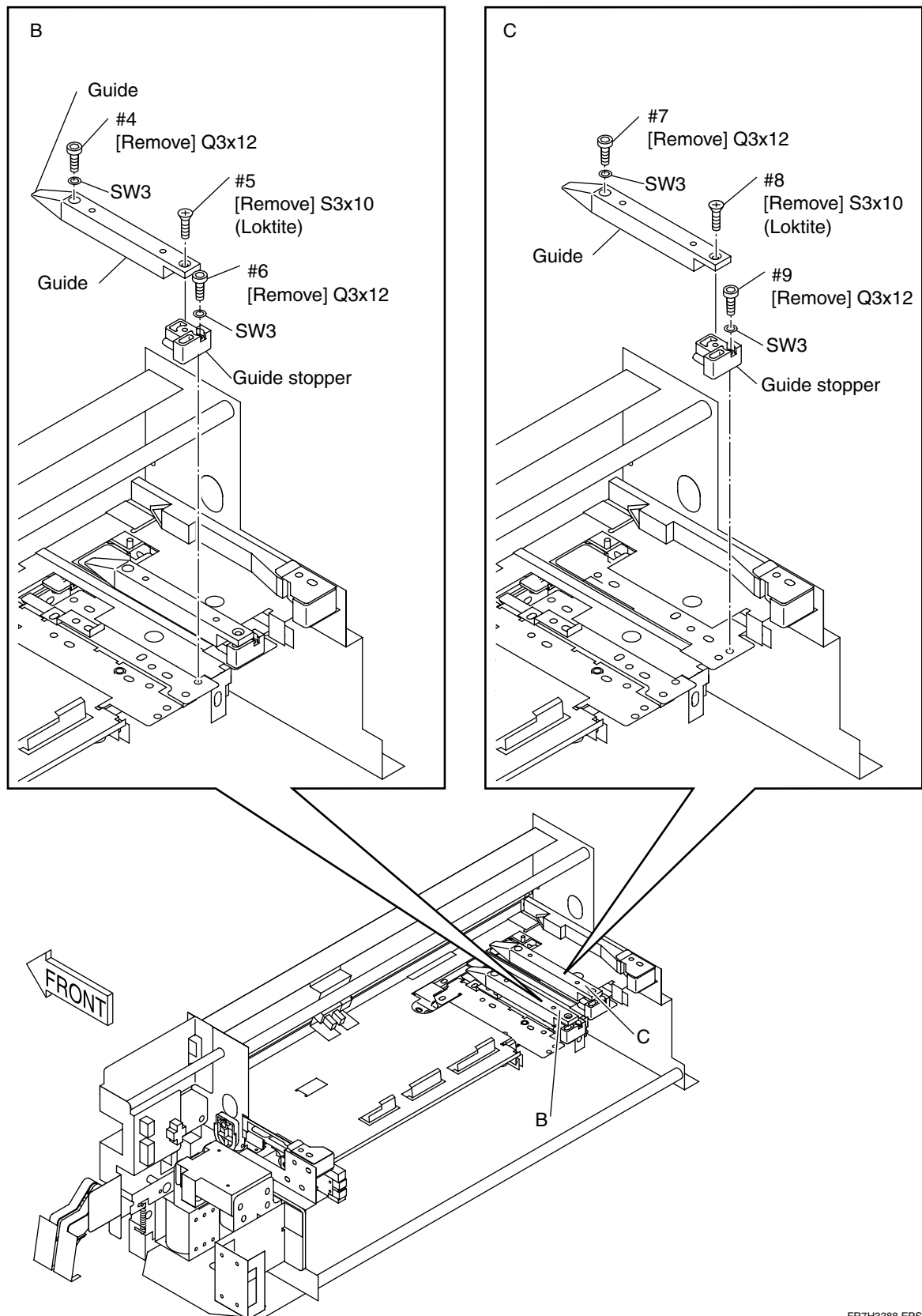
FR7H3013.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.  
 "4.1 Cassette Set Unit"
- (2) Remove the rubber roller.  
 "4.10 Rubber Roller"
- (3) Remove the guide stoppers.



FR7H3343.EPS

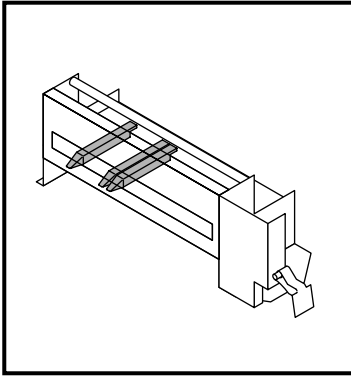


FR7H3388.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

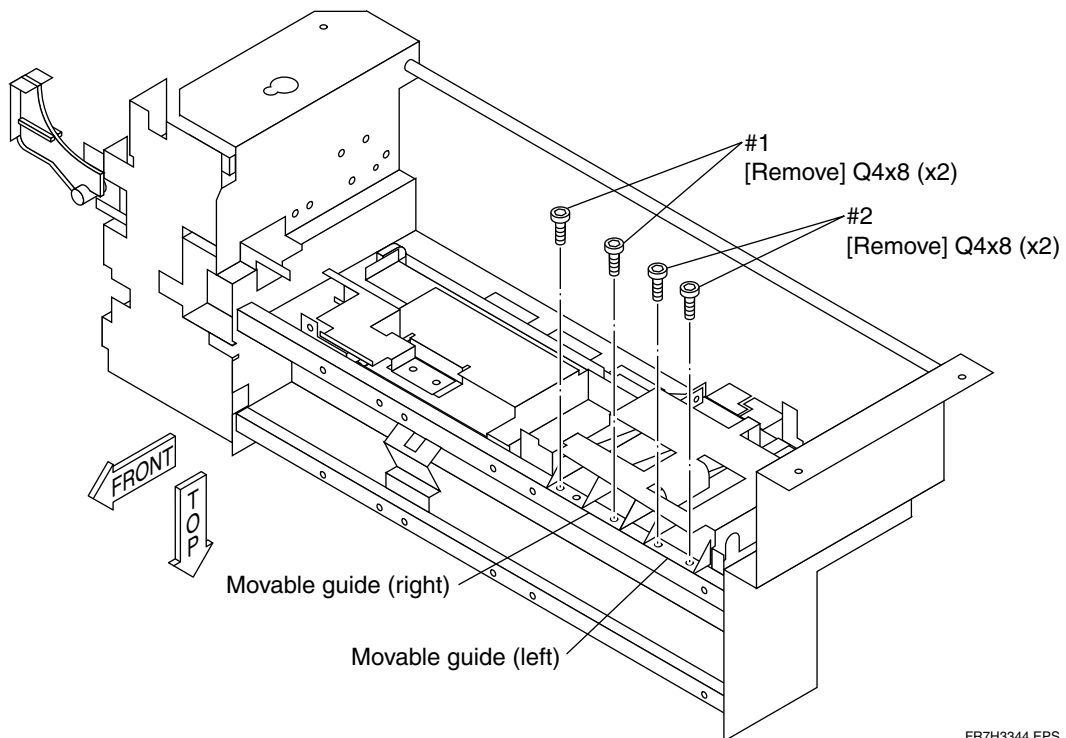
## 4.13 Movable Guides



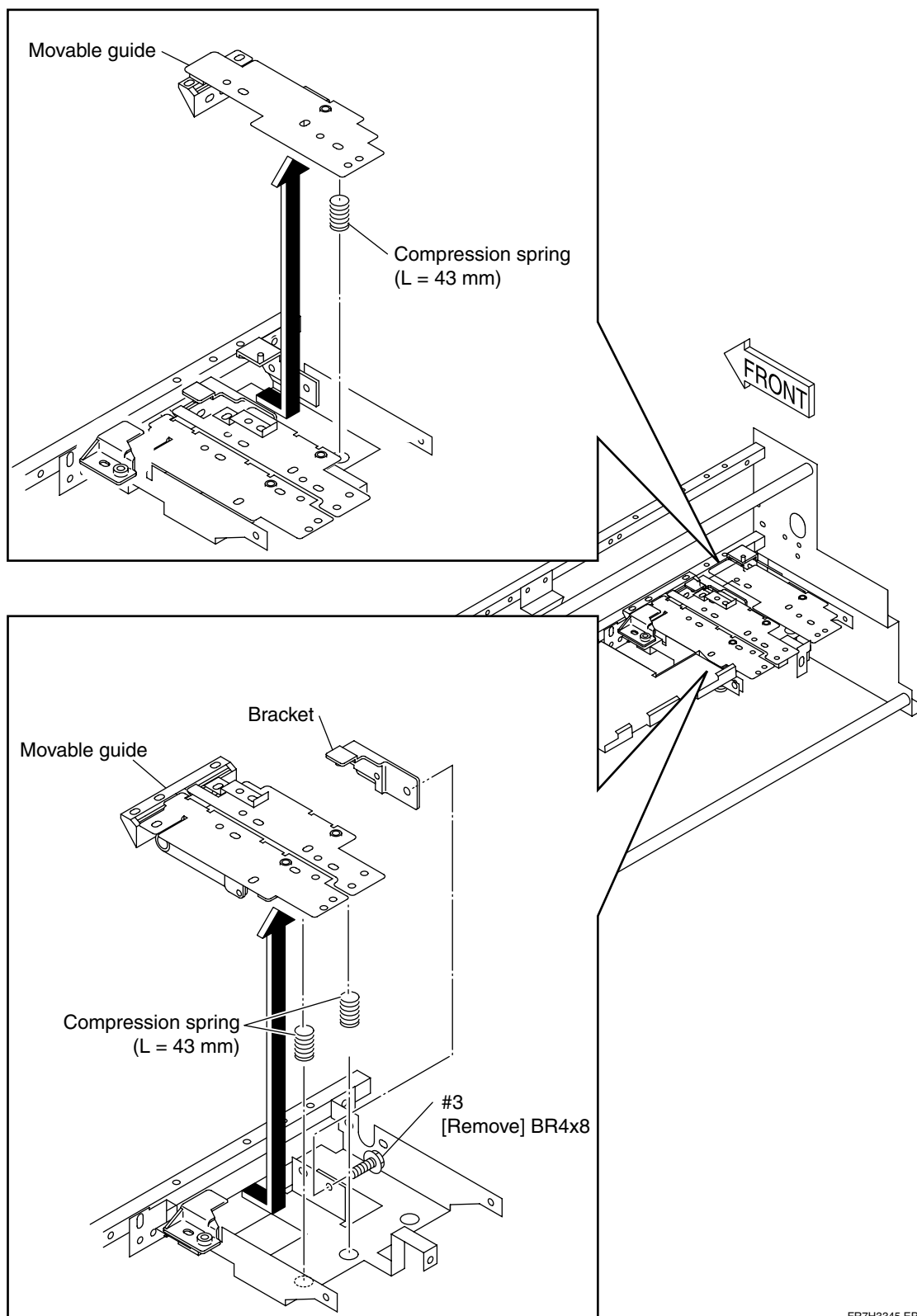
FR7H3014.EPS

### ■ Removal procedure

- (1) Remove the guide plate.  
☞ “4.11 Guide Plate”
- (2) Remove the guide stoppers.  
☞ “4.12 Guide Stoppers”
- (3) Remove the movable guides.



FR7H3344.EPS



FR7H3345.EPS

## ■ Installation procedure

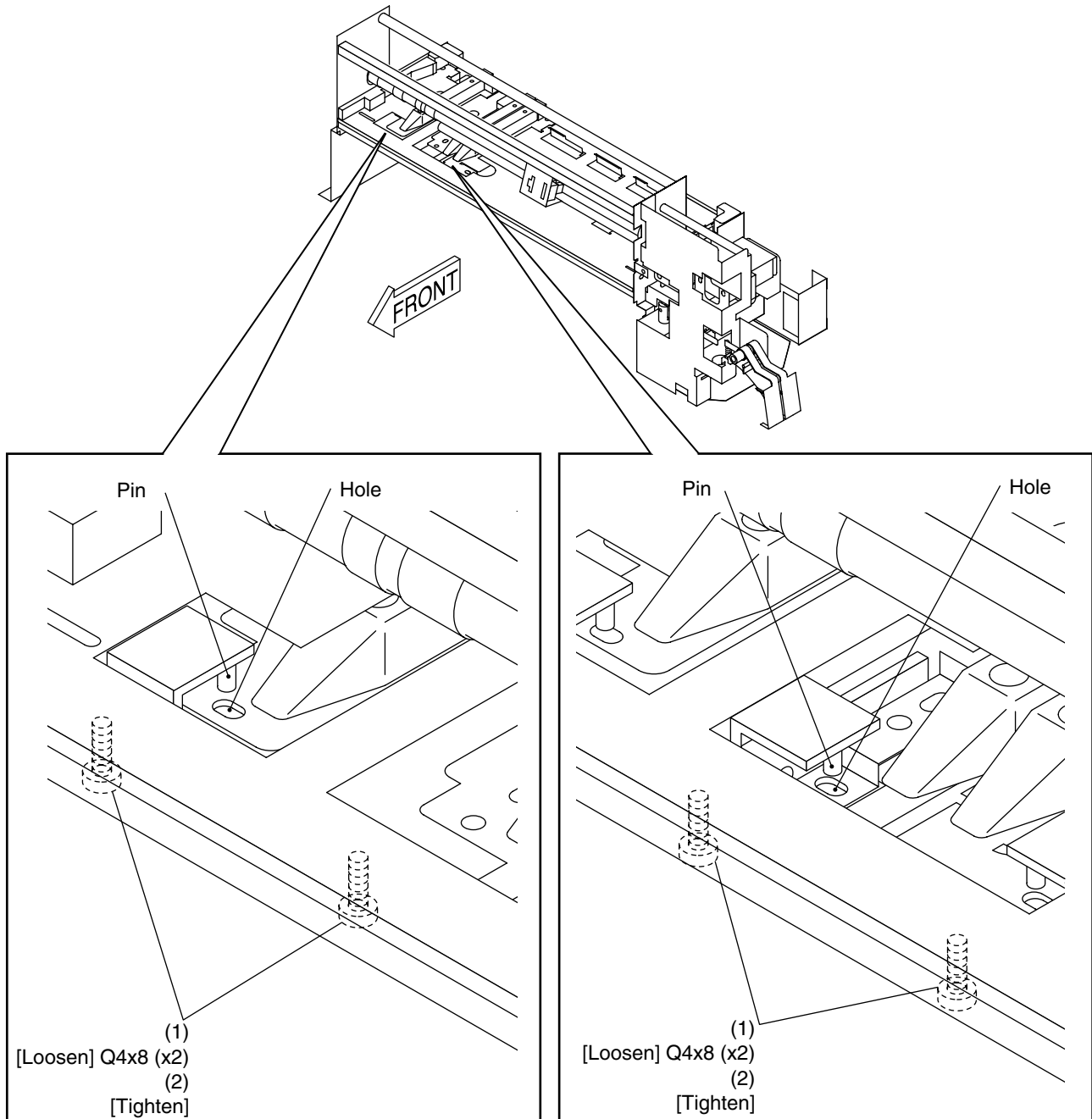
However, complete the following adjustment procedure immediately before shutter assembly reinstallation.



## ■ Adjustment procedure

### ● Widthwise adjustment

- (1) Loosen the movable guide retaining screws.
- (2) Tighten the retaining screws so that the bracket pin lodges in the movable guide hole.

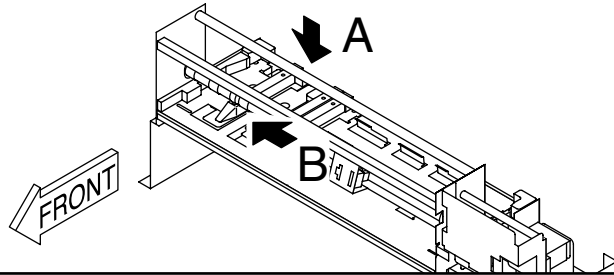


FR7H3387.EPS

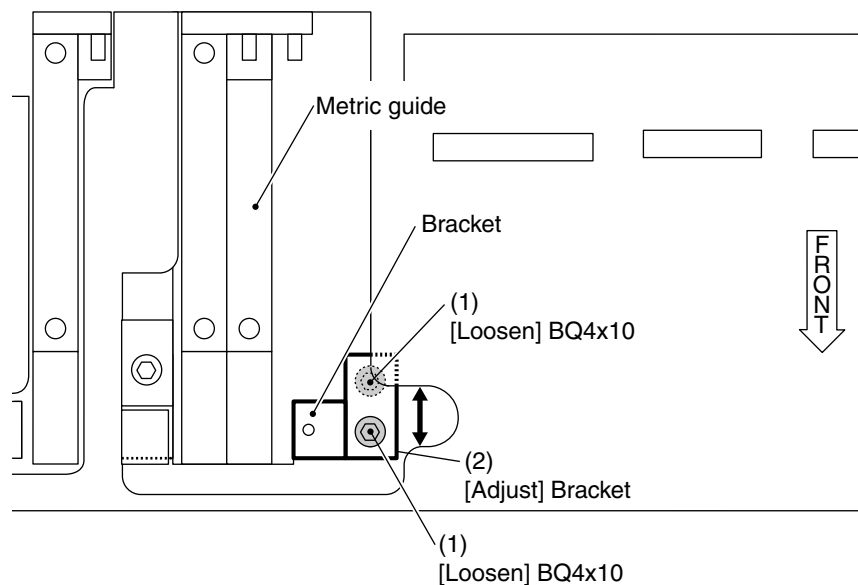
## ● Movable guide rearward adjustment

### ○ Metric guide

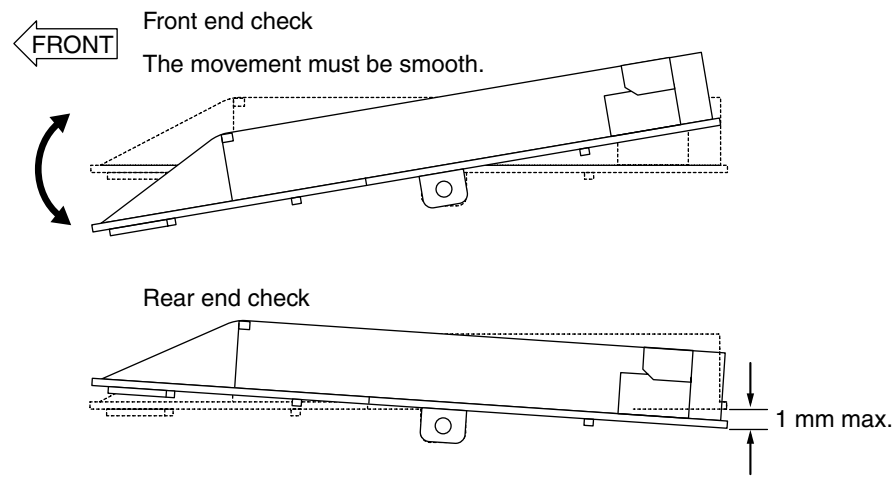
- (1) Loosen the bracket.
- (2) Adjust the bracket position to meet the following requirements:
  - The up-down movement of the movable guide front end must be smooth.
  - The amount of movable guide rear end descent must not exceed 1 mm.



DETAIL A



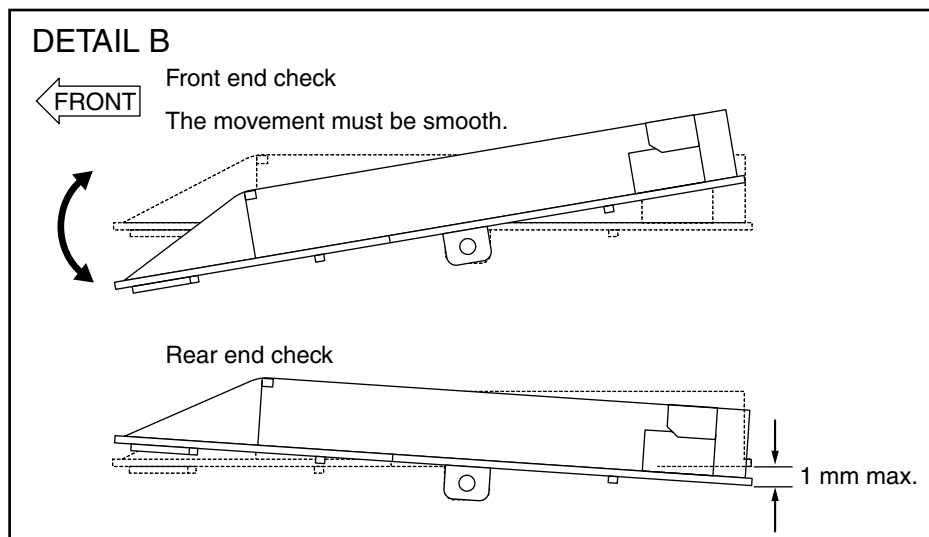
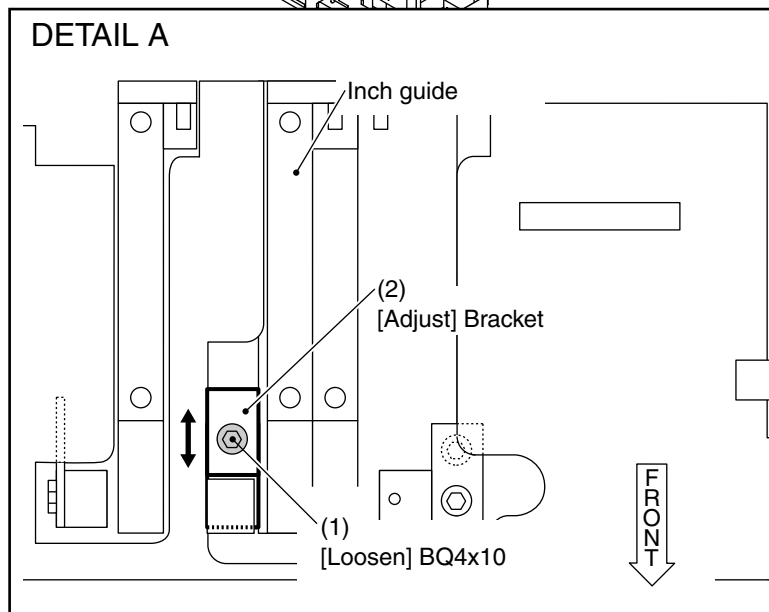
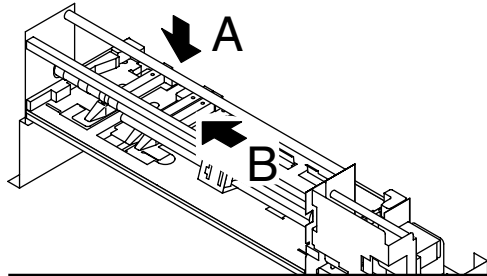
DETAIL B



FR7H3347.EPS

### ○ Inch guide

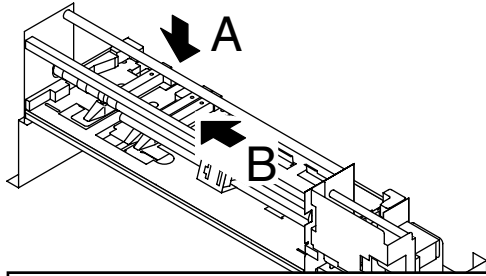
- (1) Loosen the bracket.
- (2) Adjust the bracket position to meet the following requirements:
  - The up-down movement of the movable guide front end must be smooth.
  - The amount of movable guide rear end descent must not exceed 1 mm.



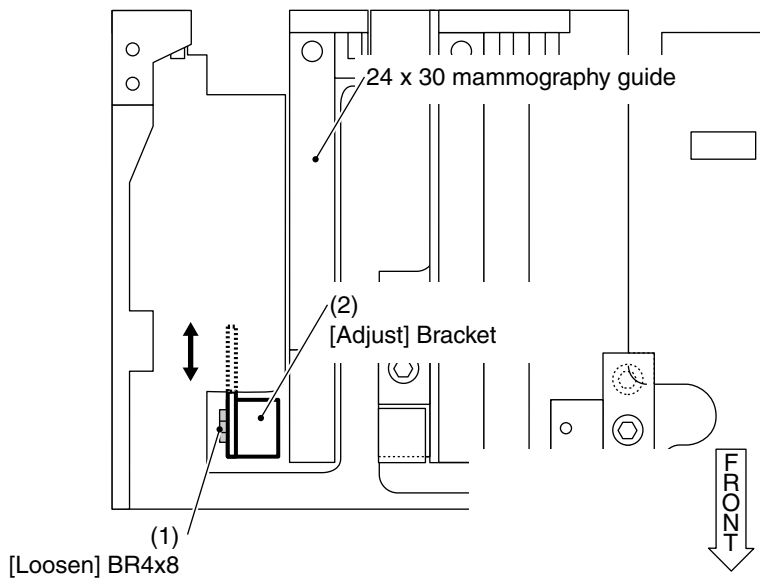
FR7H3348.EPS

## ○ 20 x 30 mammography guide

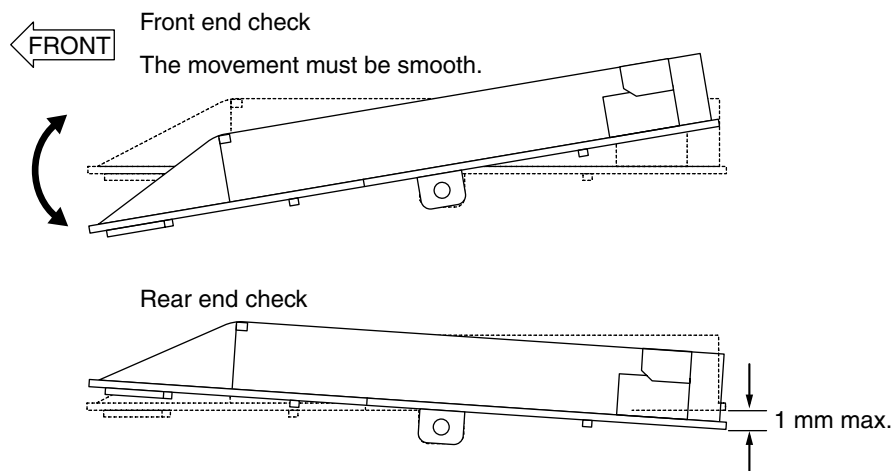
- (1) Loosen the bracket.
- (2) Adjust the bracket position to meet the following requirements:
  - The up-down movement of the movable guide front end must be smooth.
  - The amount of movable guide rear end descent must not exceed 1 mm.



### DETAIL A



### DETAIL B



FR7H3349.EPS

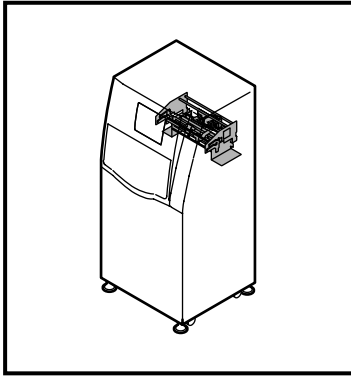
**■ Check procedure**

Insert cassettes of various sizes into the cassette set unit to check that the cassettes open.  
If the cassettes do not open, perform the adjustment procedures again.

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## 5. Removing and Installing the IP Removal Unit

### 5.1 IP Removal Unit

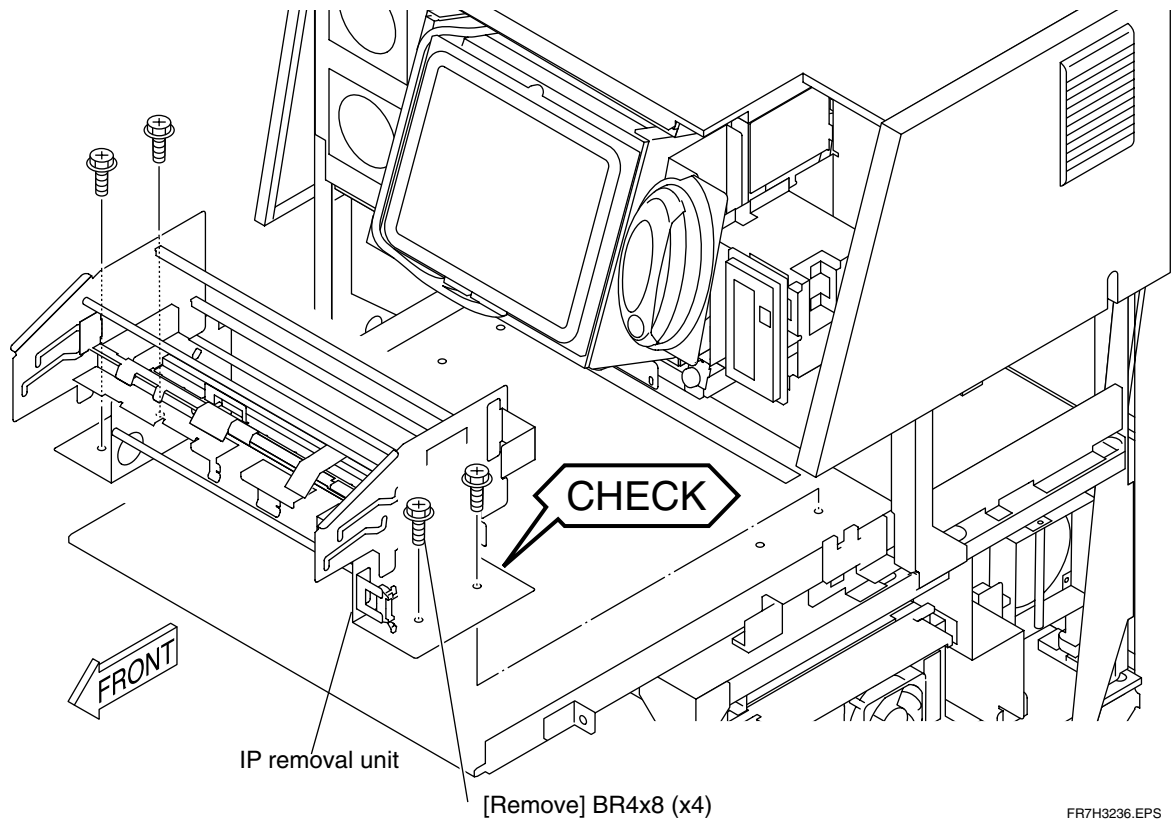


FR7H3015.EPS

#### ■ Removal procedure

- (1) Remove the cassette set unit.  
☞ “4.1 Cassette Set Unit”
  - (2) Remove the following cover:
    - Lower left-hand side cover
- ☞ “3. Removing and Installing the Covers”

(3) Remove the IP removal unit.



FR7H3236.EPS

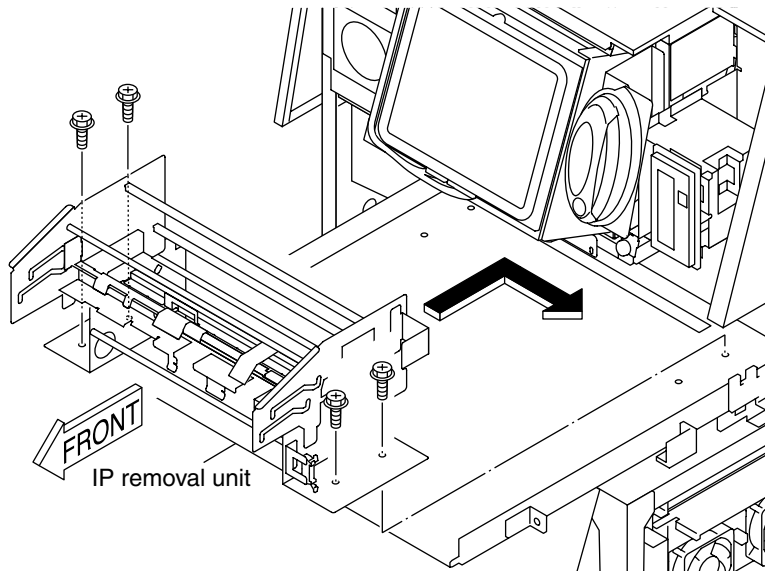


## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

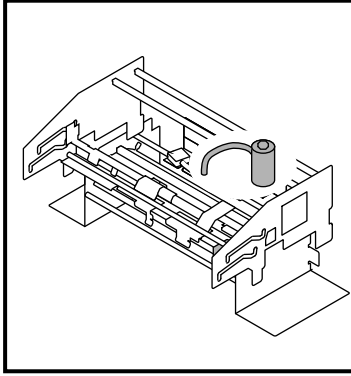
*When installing the IP removal unit, loosely attach it with the screws, and shift it rearward and then rightward (toward the reference surface).*



FR7H3237.EPS

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## 5.2 IP Leak Valve (SVL1)



FR7H3016.EPS

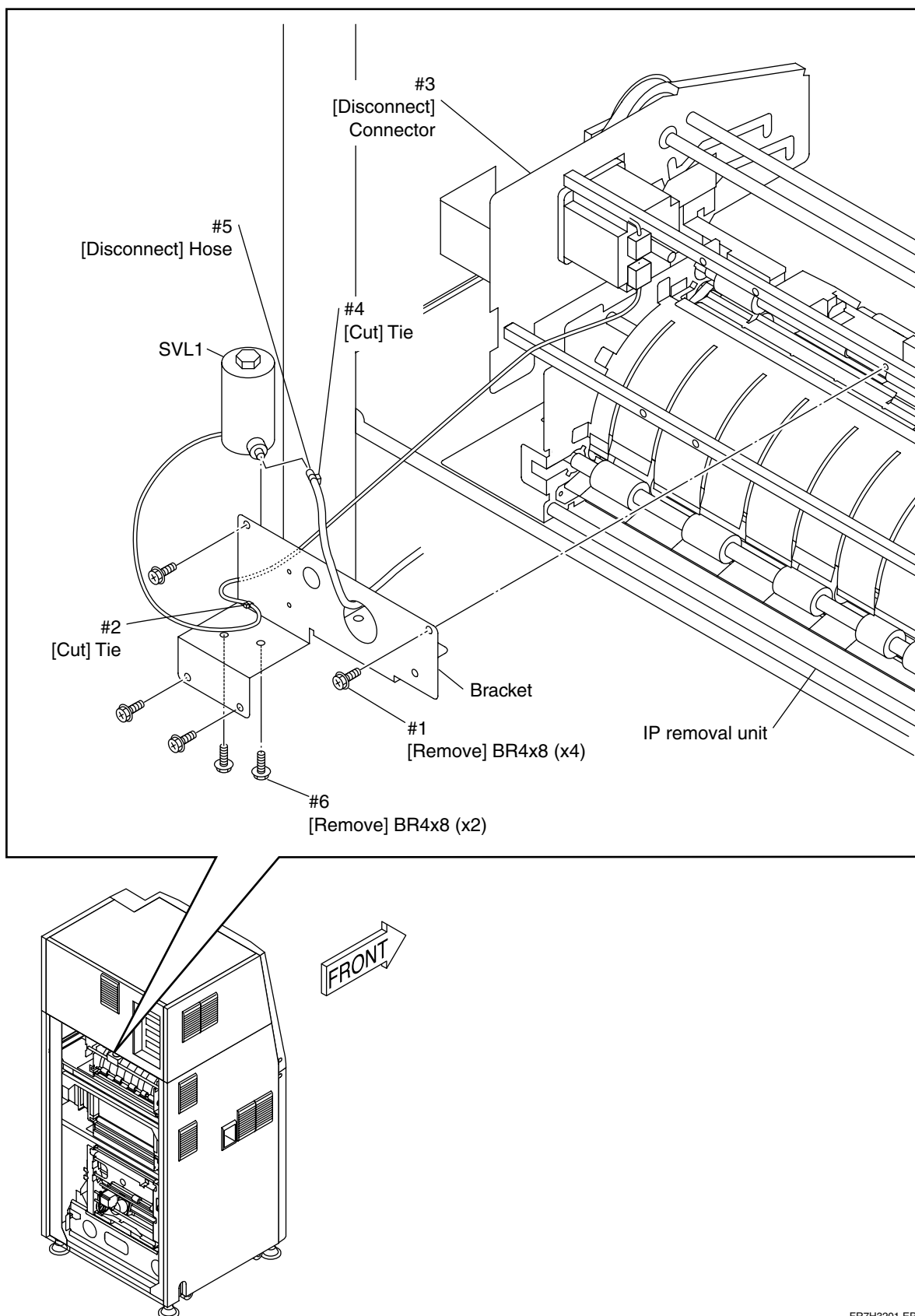
### ■ Removal procedure

(1) Remove the following cover:

- Lower rear cover

☞ “3. Removing and Installing the Covers”

## (2) Remove the IP leak valve (SVL1)

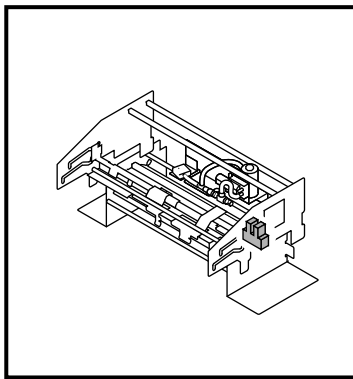


FR7H3201.EPS

**■ Installation procedure**

To accomplish installation, reverse the removal procedure.

## 5.3 Suction Cup HP Sensor (SL1)



FR7H3017.EPS

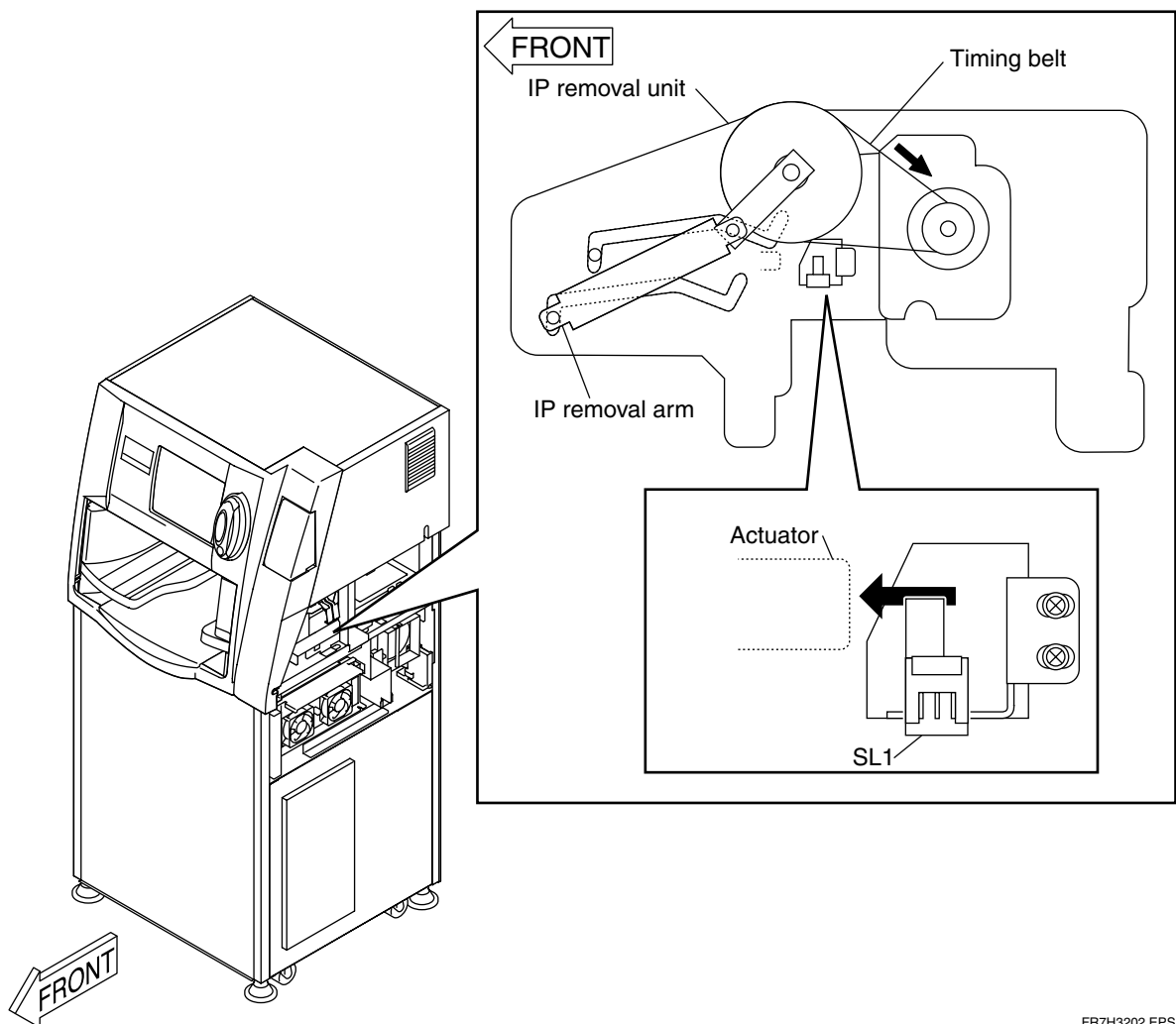
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover

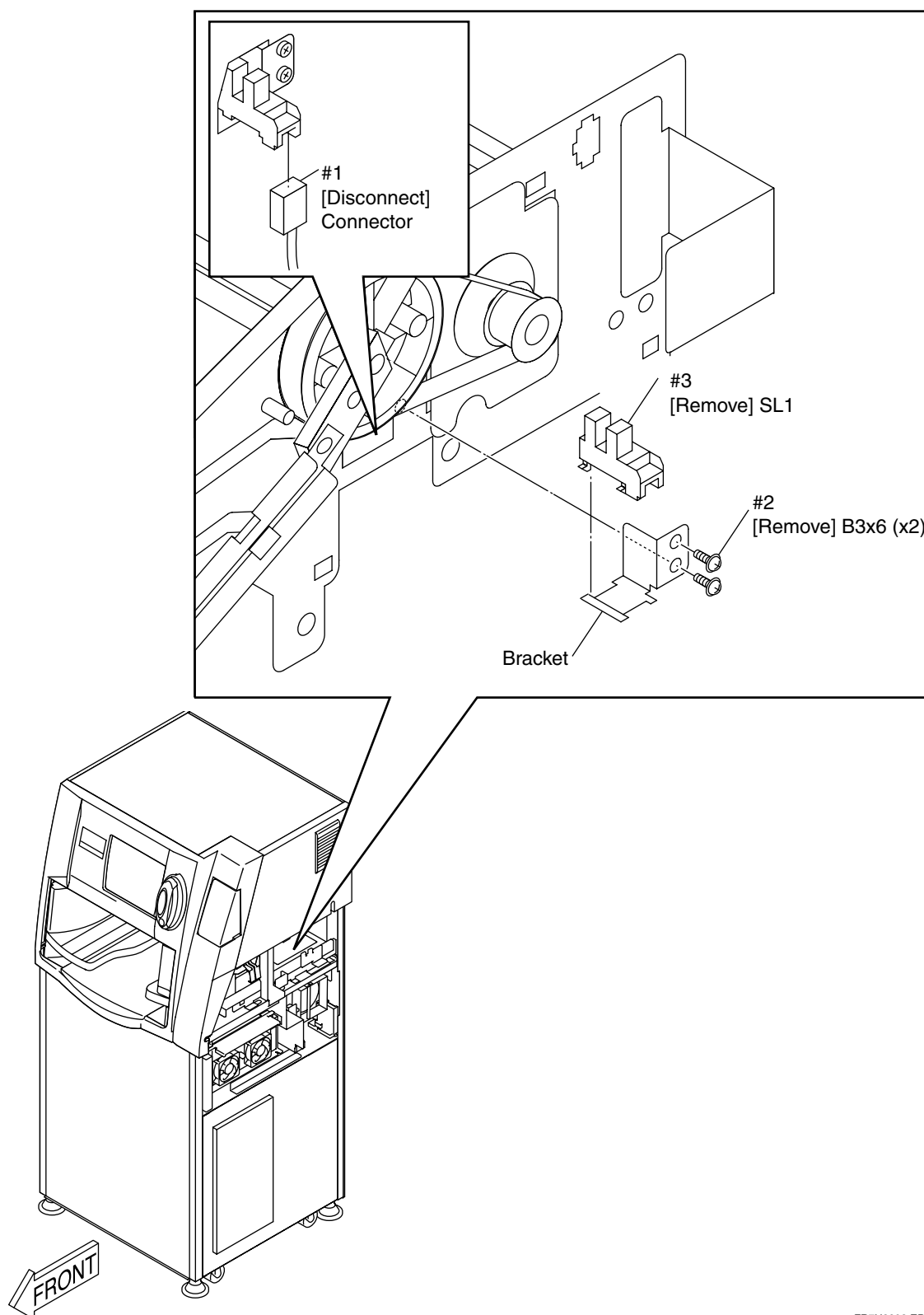
☞ “3. Removing and Installing the Covers”

(2) Rotate the timing belt to move the actuator away from the SL1.



FR7H3202.EPS

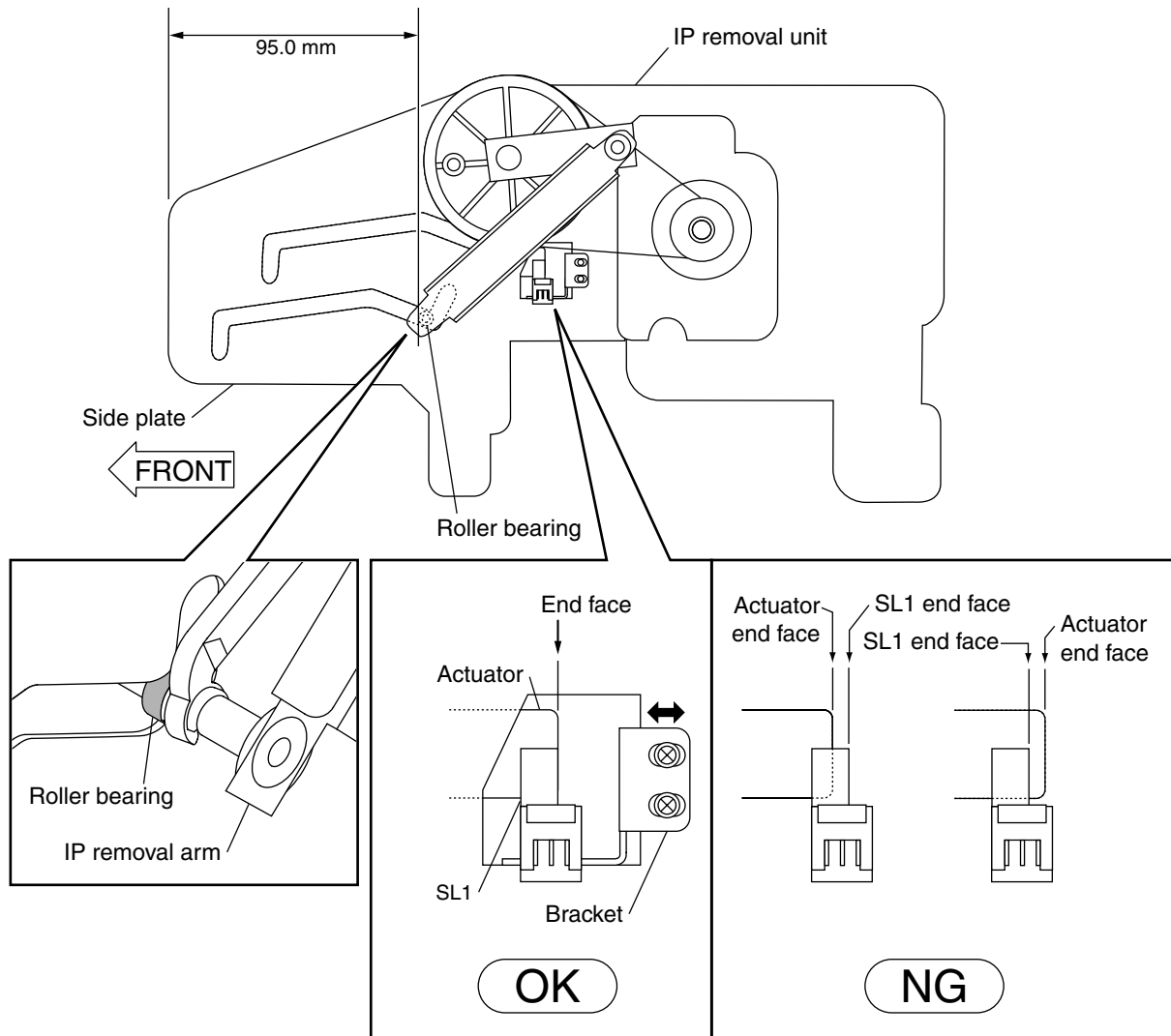
(3) Remove the suction cup HP sensor (SL1).



FR7H3203.EPS

## ■ Installation procedure

- (1) Mount the suction cup HP sensor (SL1) on the bracket.
- (2) Loosely attach the bracket.
- (3) Secure the bracket so that the SL1 end face is flush with the actuator end face when the distance between the side plate end face and roller bearing end face is 95.0 mm.



FR7H3204.EPS

- (4) Install the IP removal unit and cassette set unit by reversing their removal procedures.

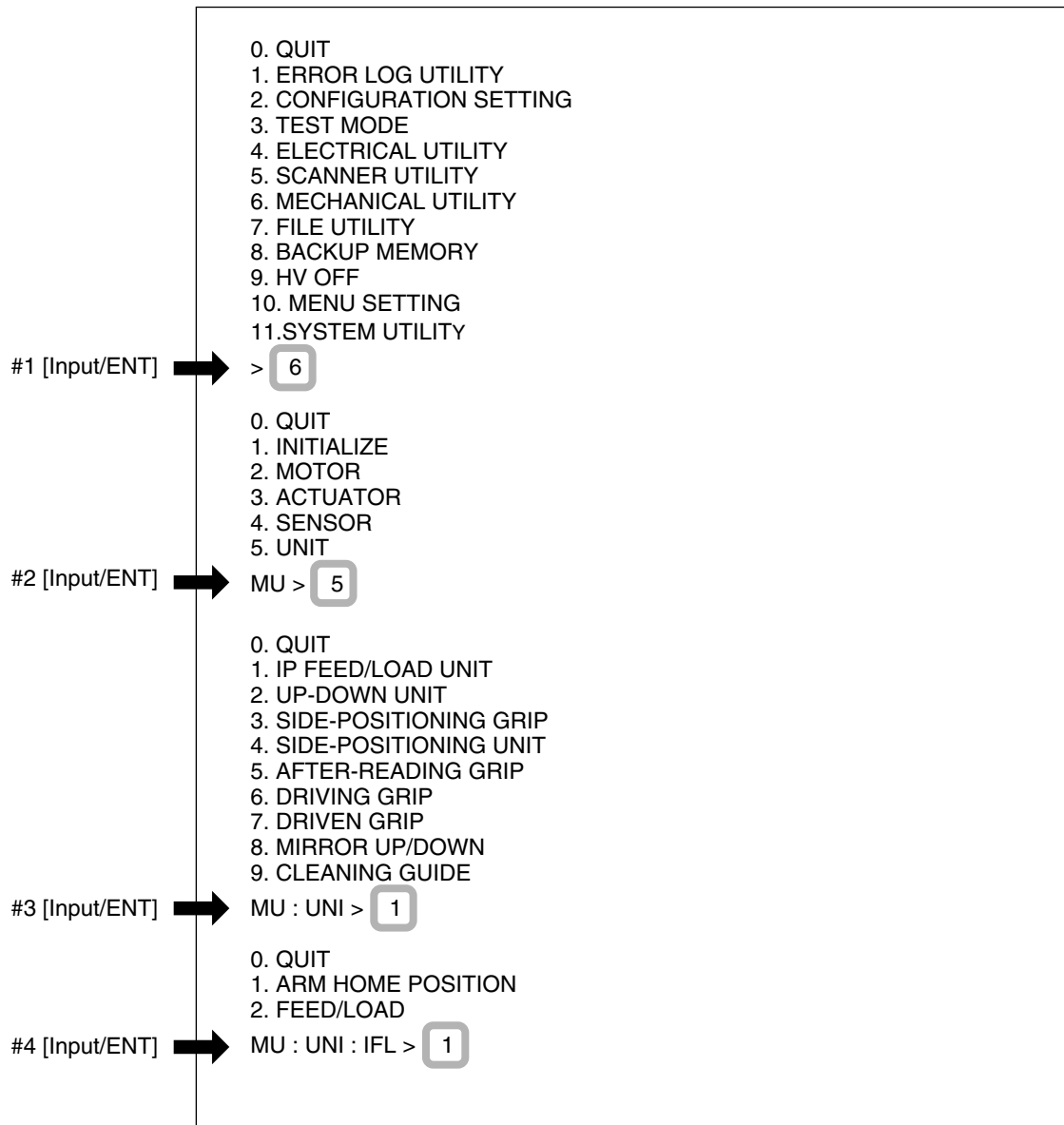
## ■ Check/adjustment procedure



### CAUTION

*When turning ON the machine with the laser protective housing (cover installed over the scanner unit) removed, be sure to turn OFF the high-voltage switch (S1) on the SCN board*

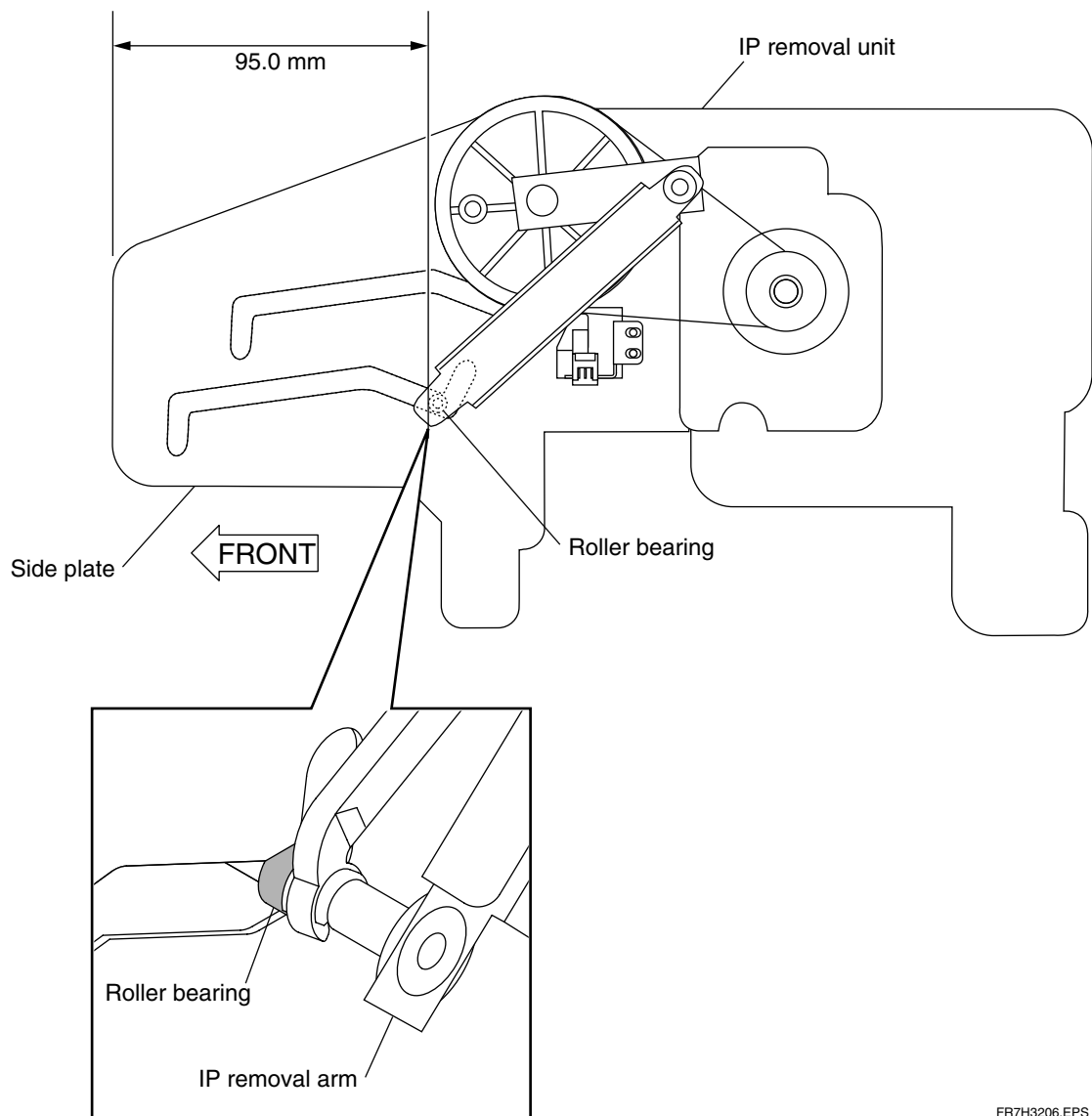
- (1) Turn ON the power.
- (2) Start the M-Utility.
- (3) Place the IP removal arm in the HP.



FR7H3205.EPS



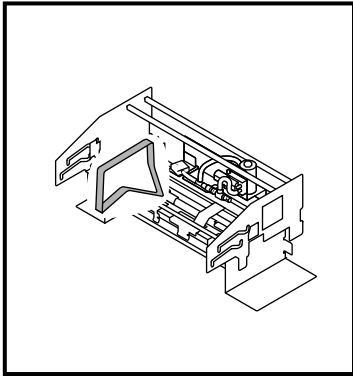
- (4) Verify that the distance between the end faces of the IP removal unit side plate and roller bearing is about 95.0 mm.



FR7H3206.EPS

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## 5.4 Timing Belt (for IP Conveyance)



FR7H3019.EPS

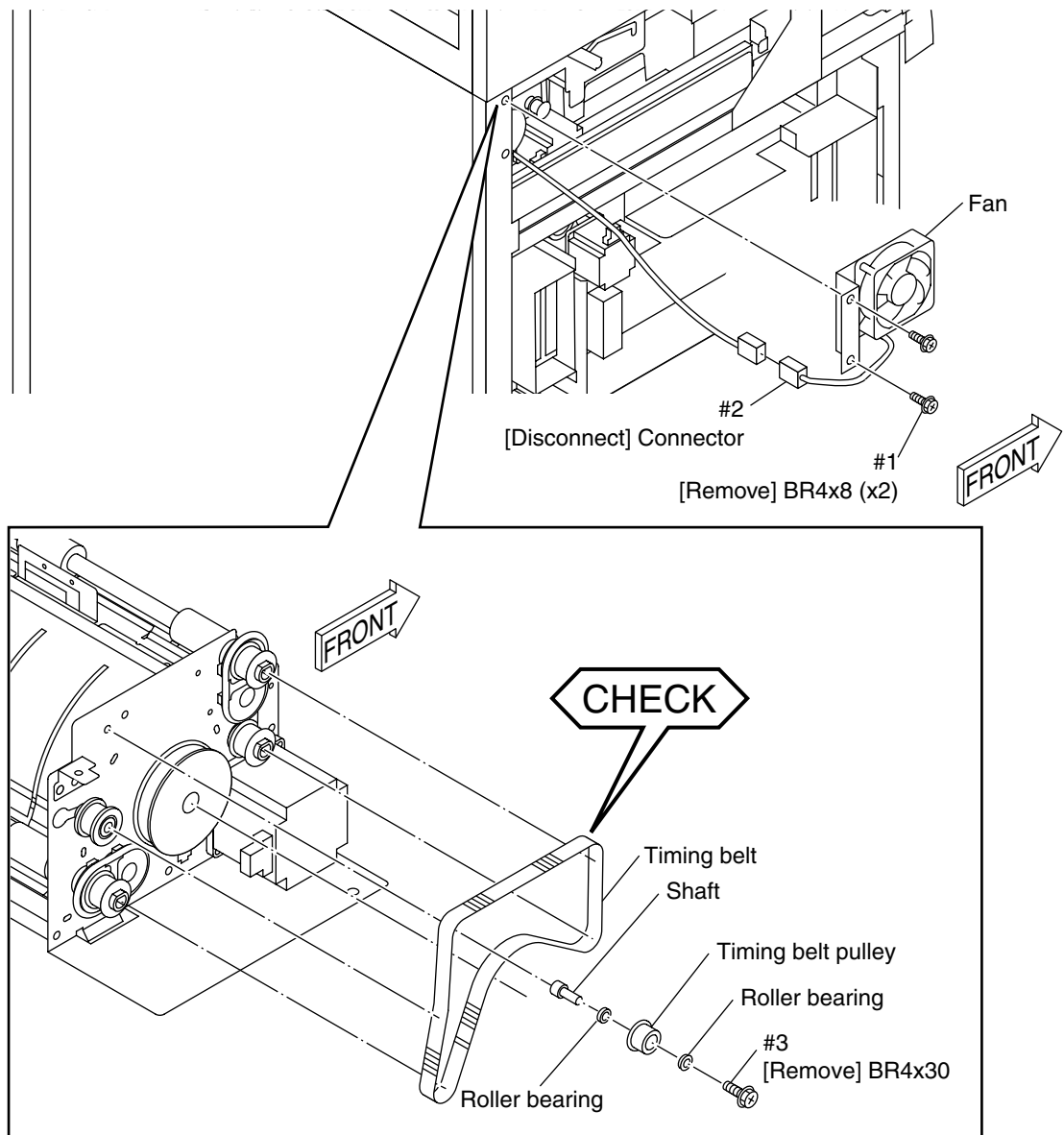
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover

☞ “3. Removing and Installing the Covers”

(2) Remove the timing belt (for IP conveyance).



FR7H3207.EPS

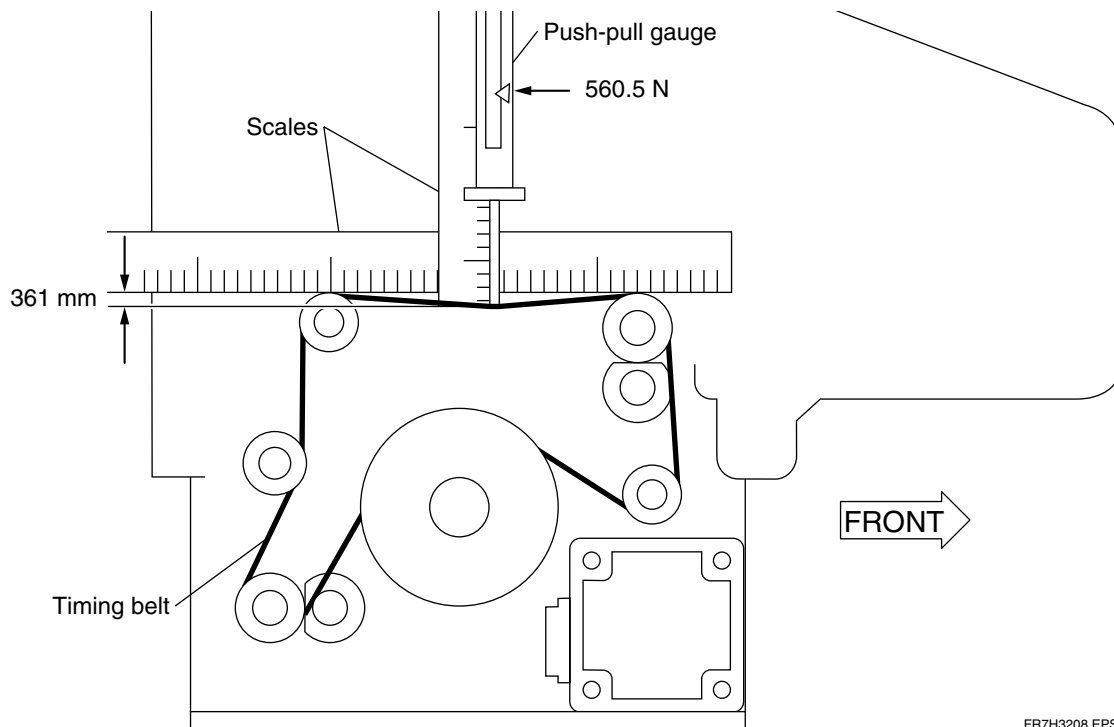
## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## ■ Check/adjustment procedure

- Verify that the timing belt is properly threaded through its path.
- After the timing belt is replaced with a new one or the tensioner is removed and reinstalled, remove the IP removal unit and adjust the belt tension with the tensioner screw.

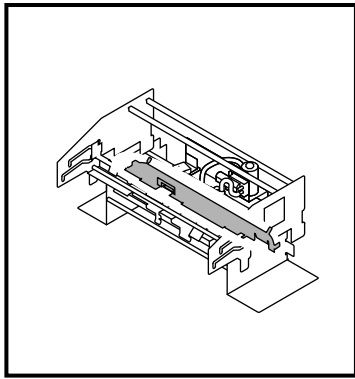
👉 “5.1 IP Removal Unit”



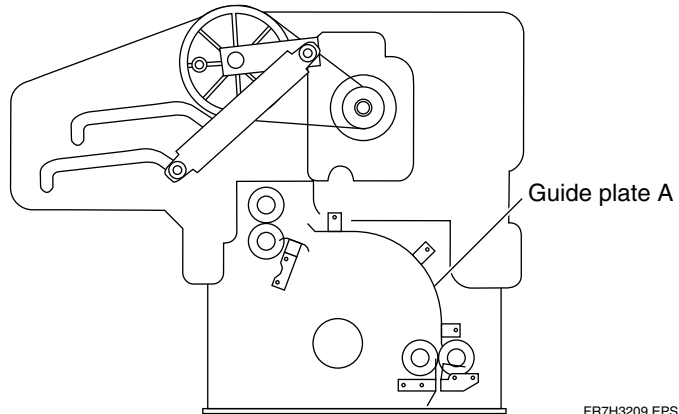
FR7H3208.EPS

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## 5.5 Guide Plate A



FR7H3020.EPS



FR7H3209.EPS

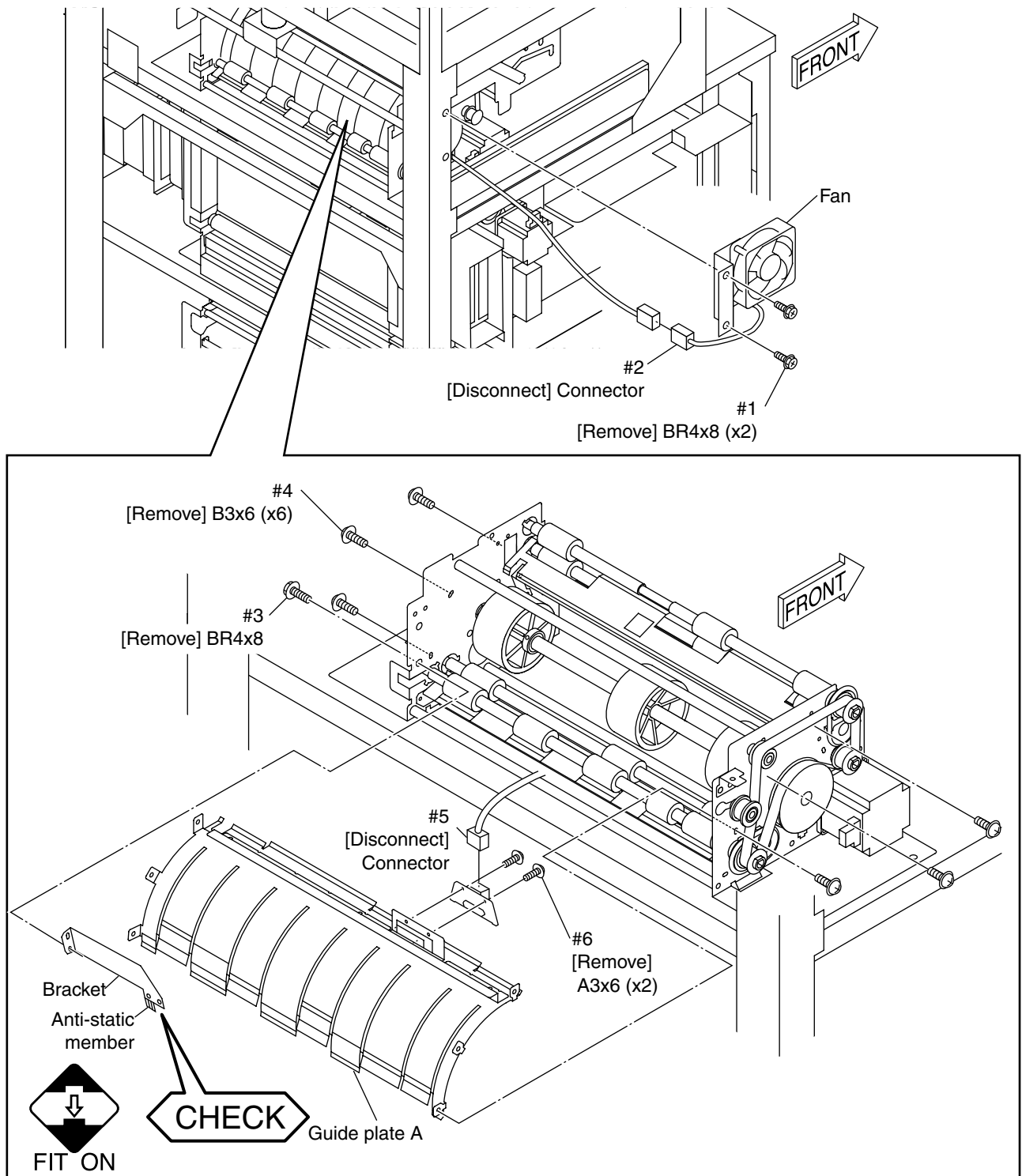
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Lower left-hand side cover
- Lower rear cover

☞ “3. Removing and Installing the Covers”

- (2) Remove the fan assembly.
- (3) Remove guide plate A.



FR7H3210.EPS

## ■ Installation procedure

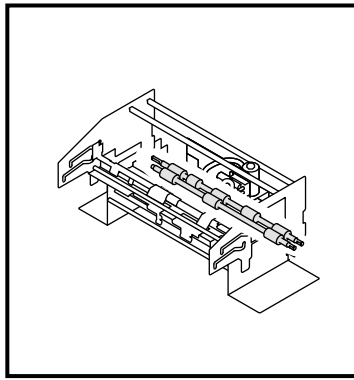
To accomplish installation, reverse the removal procedure.

## ■ Check procedure

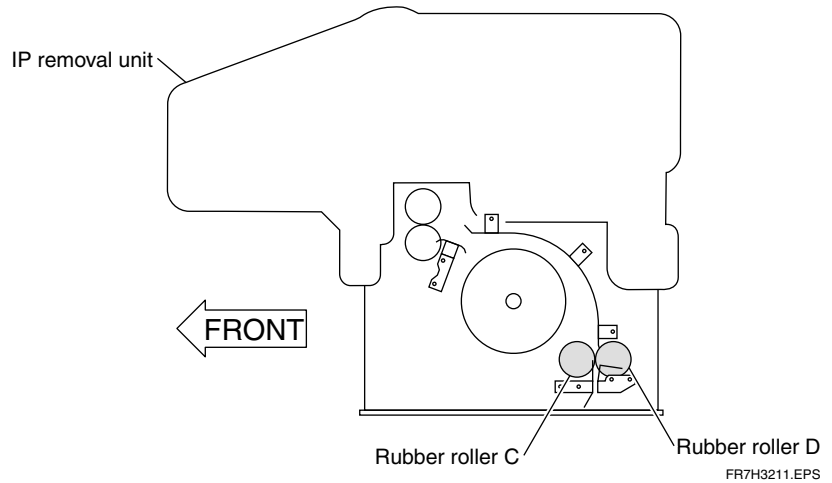
Make sure that the anti-static member is brought into contact with the roller.



## 5.6 Rubber Rollers C and D



FR7H3021.EPS

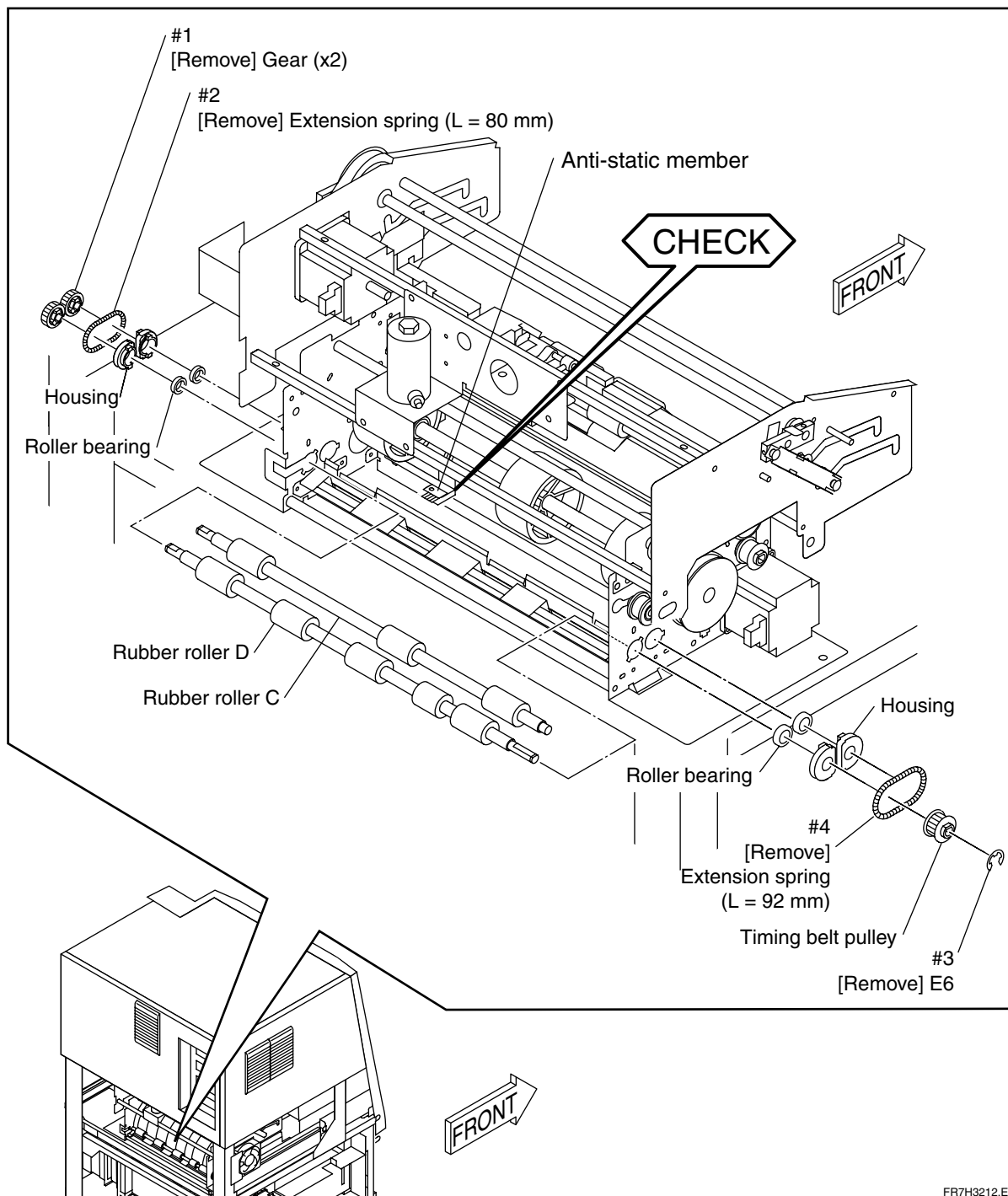


FR7H3211.EPS

### ■ Removal procedure

- (1) Remove the timing belt (for IP conveyance).  
☞ “5.4 Timing Belt (for IP Conveyance)”
- (2) Remove guide plate A.  
☞ “5.5 Guide Plate A”

## (3) Remove rubber rollers C and D.



FR7H3212.EPS

## ■ Installation procedure

### ◆ INSTRUCTION ◆

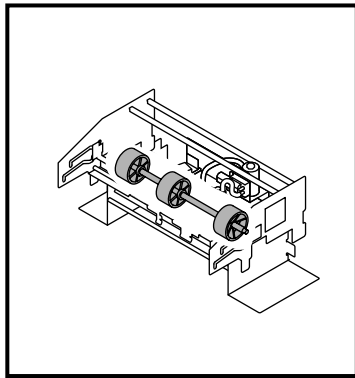
*The extension spring size varies with the mounting location. When installing the extension springs, pay due attention to their mounting locations.*

To accomplish installation, reverse the removal procedure.

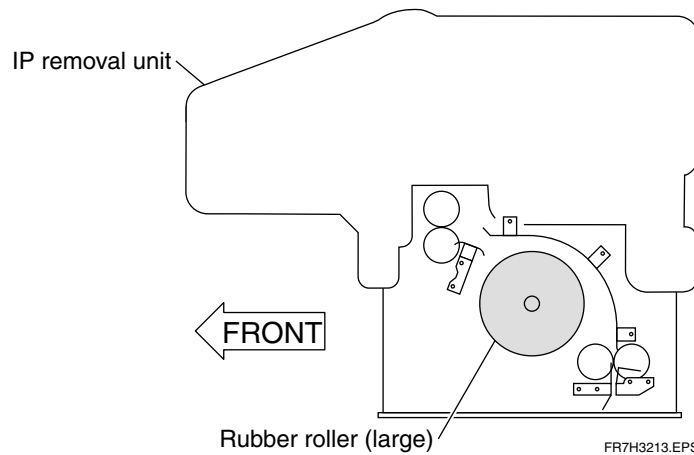
## ■ Check procedure

Make sure that the anti-static member is brought into contact with the roller.

## 5.7 Rubber Roller (Large)



FR7H3022.EPS

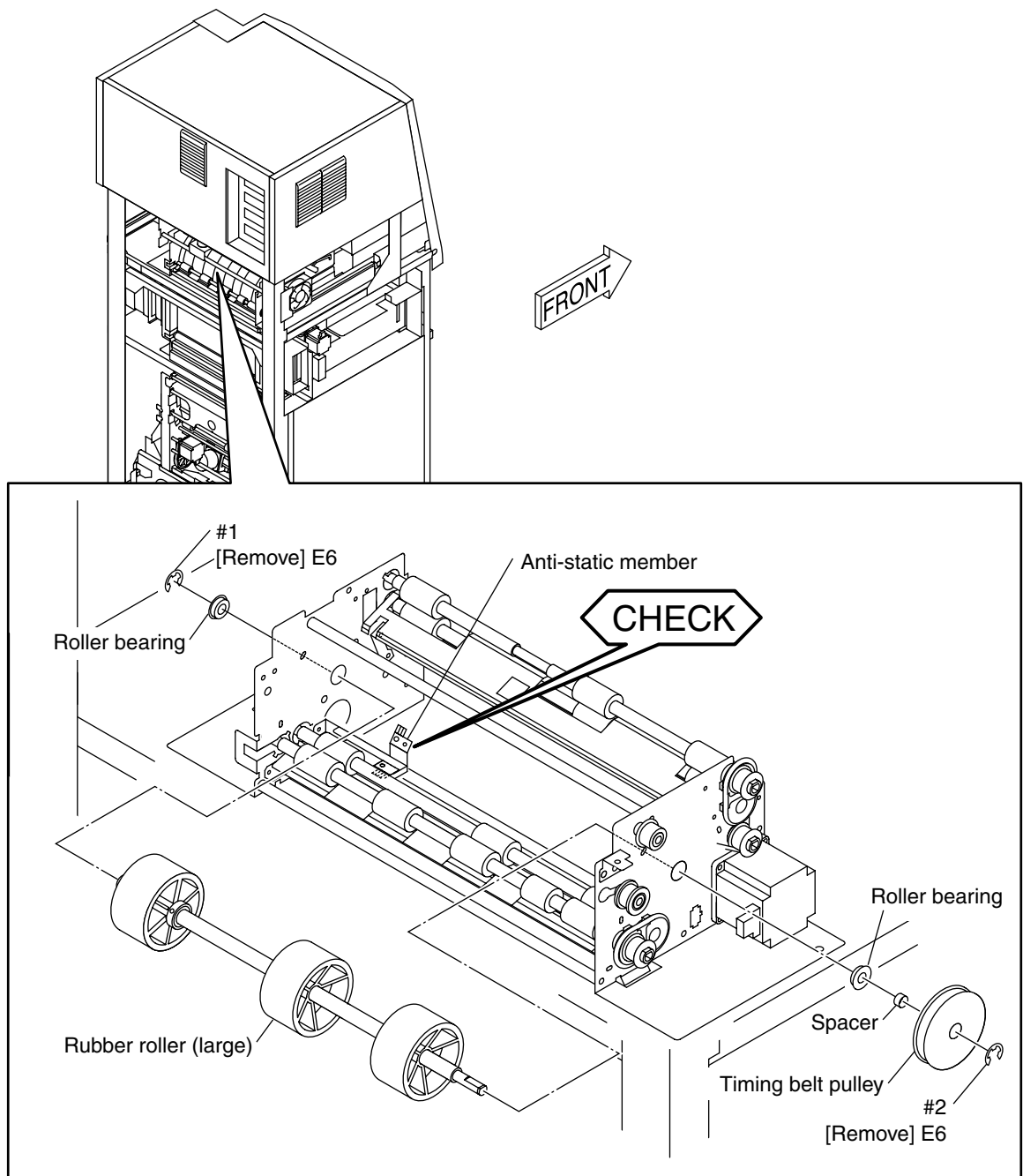


FR7H3213.EPS

### ■ Removal procedure

- (1) Remove the timing belt (for IP conveyance).  
☞ "5.4 Timing Belt (for IP Conveyance)"
- (2) Remove guide plate A.  
☞ "5.5 Guide Plate A"

(3) Remove the rubber roller (large).



FR7H3214.EPS

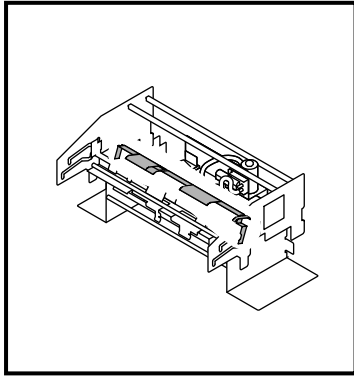
### ■ Installation procedure

To accomplish installation, reverse the removal procedure.

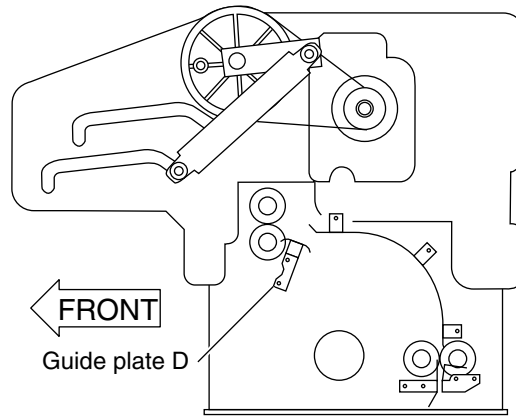
### ■ Check procedure

Make sure that the anti-static member is brought into contact with the roller.

## 5.8 Guide Plate D



FR7H3023.EPS



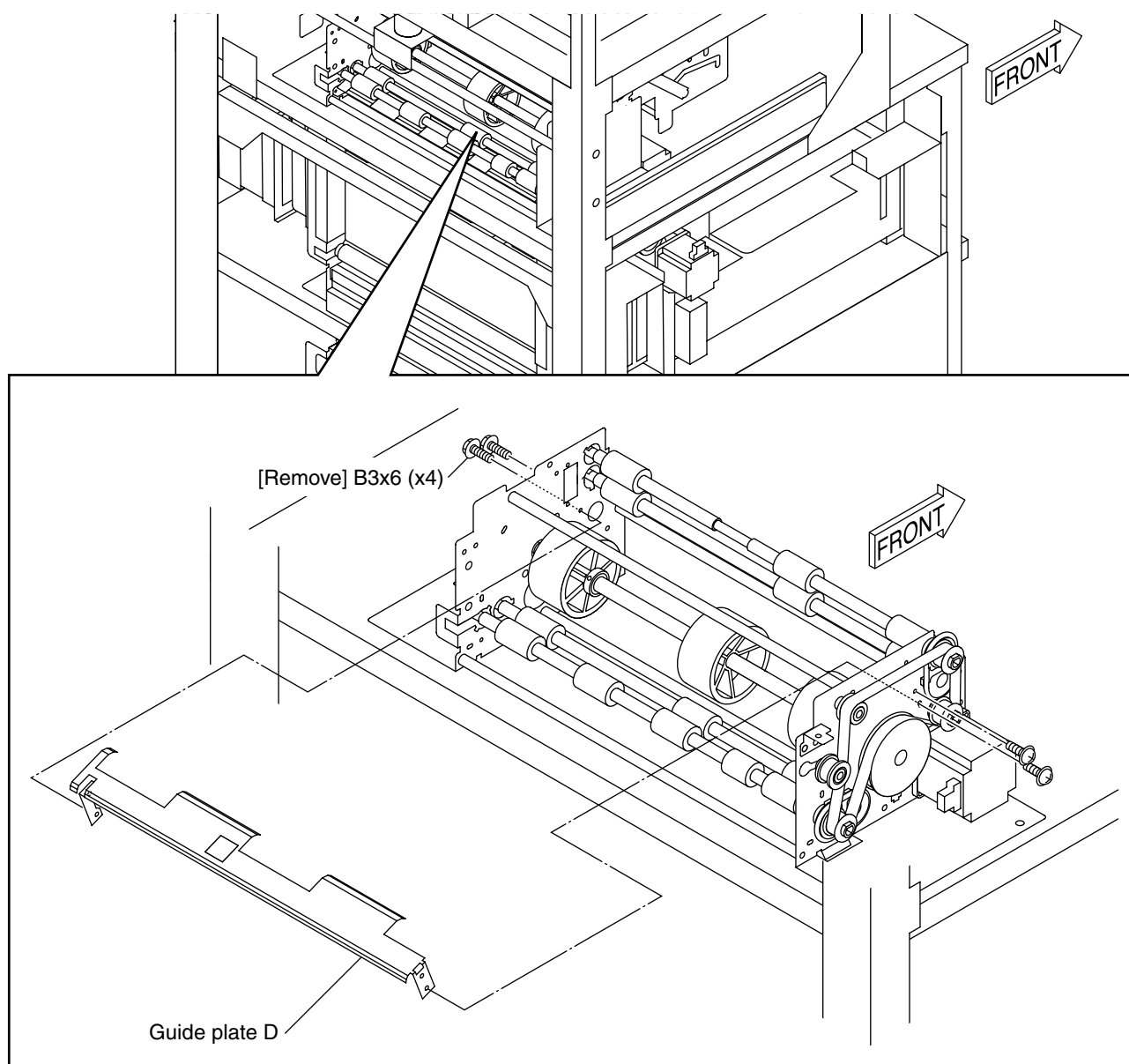
FR7H3217.EPS

### ■ Removal procedure

- (1) Remove guide plate A.

☞ “5.5 Guide Plate A”

(2) Remove guide plate D.

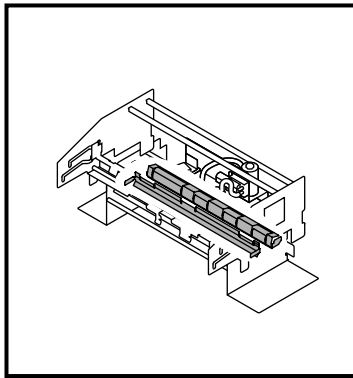


FR7H3218.EPS

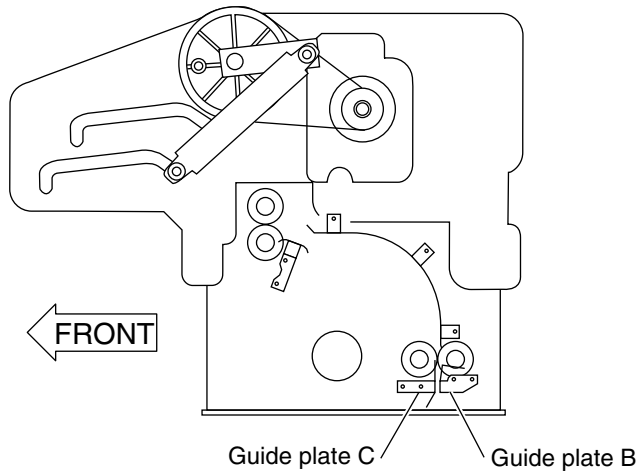
■ **Installation procedure**

To accomplish installation, reverse the removal procedure.

## 5.9 Guide Plates B and C



FR7H3024.EPS



FR7H3219.EPS

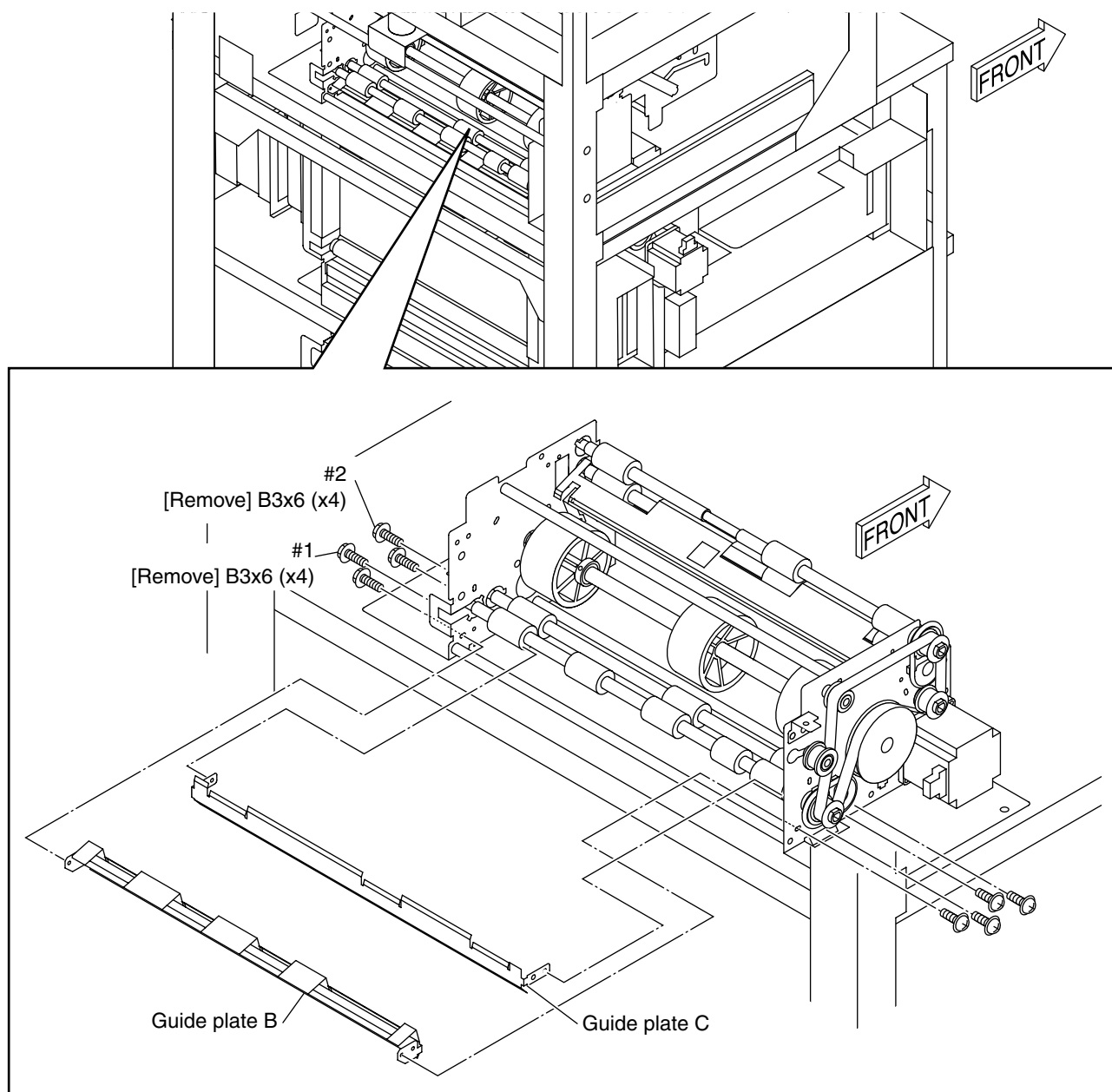
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Lower left-hand side cover
- Lower rear cover

👉 “3. Removing and Installing the Covers”

(2) Remove guide plates B and C.



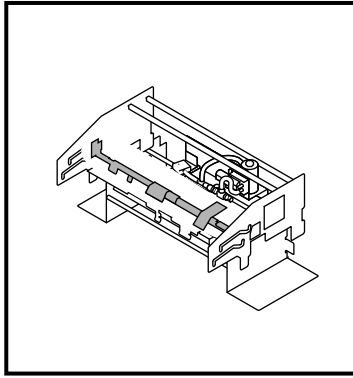
FR7H3220.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.



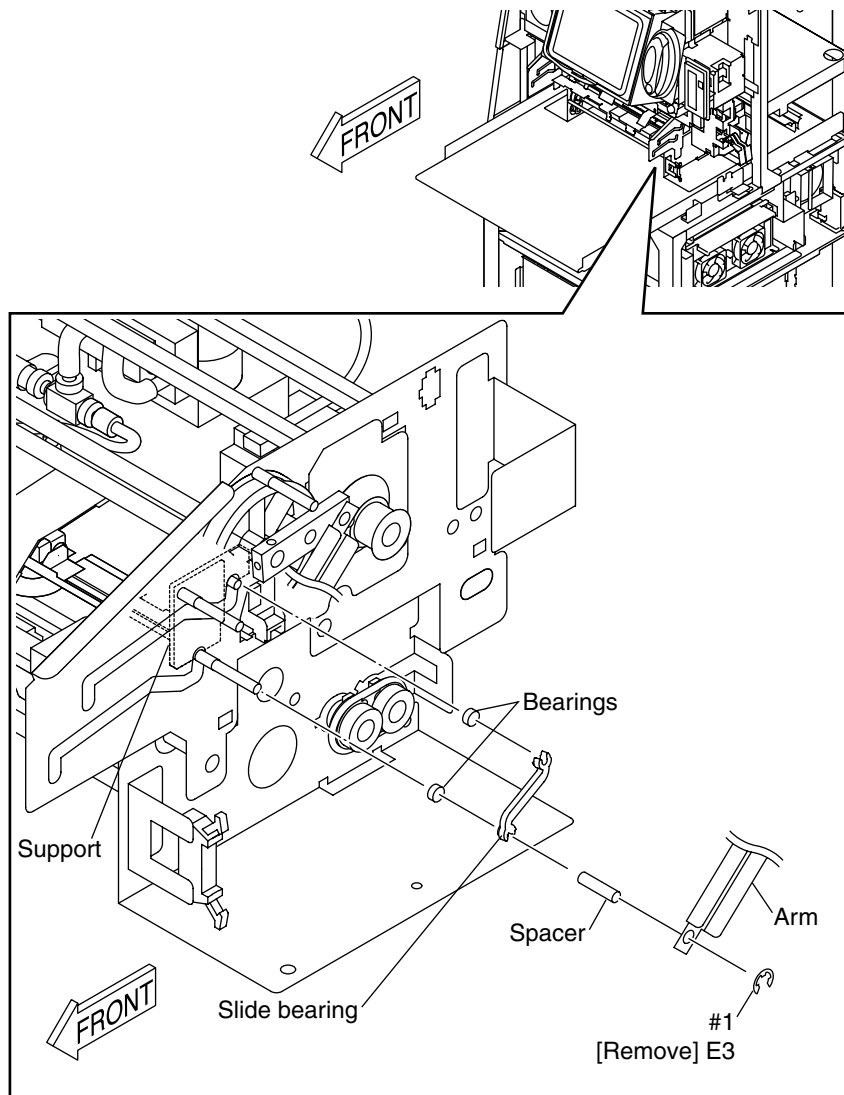
## 5.10 Supports (for IP Removal Arm)



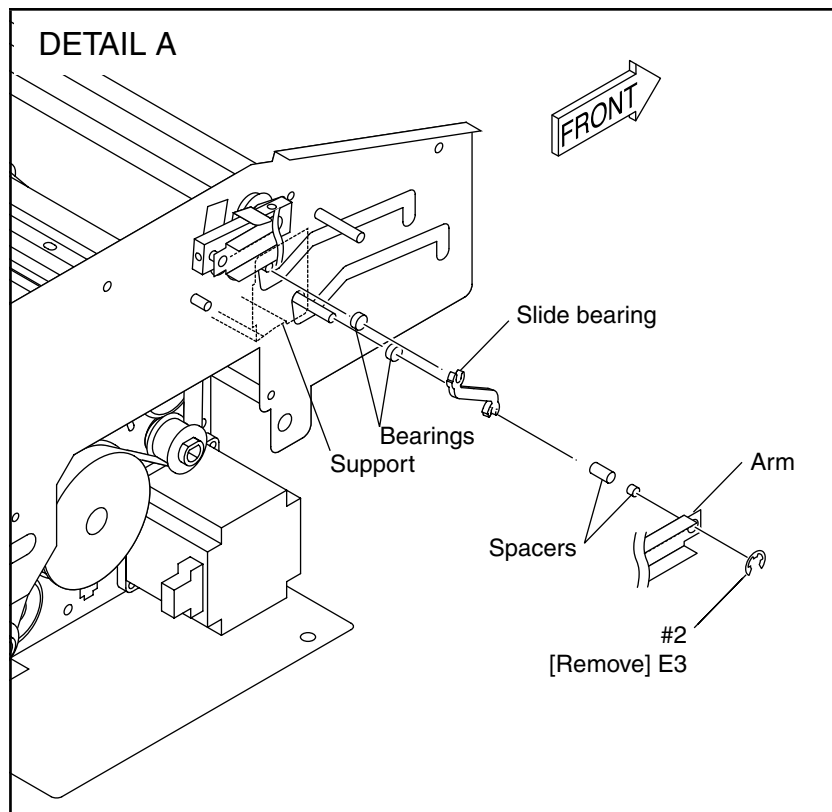
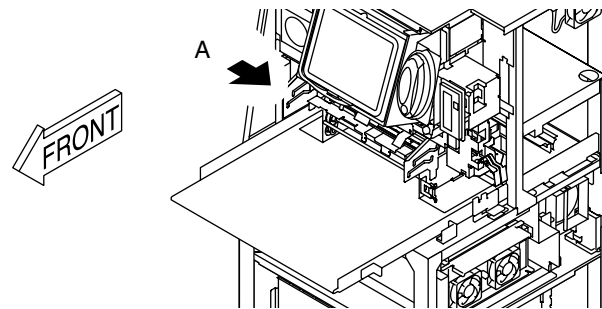
FR7H3025.EPS

### ■ Removal procedure

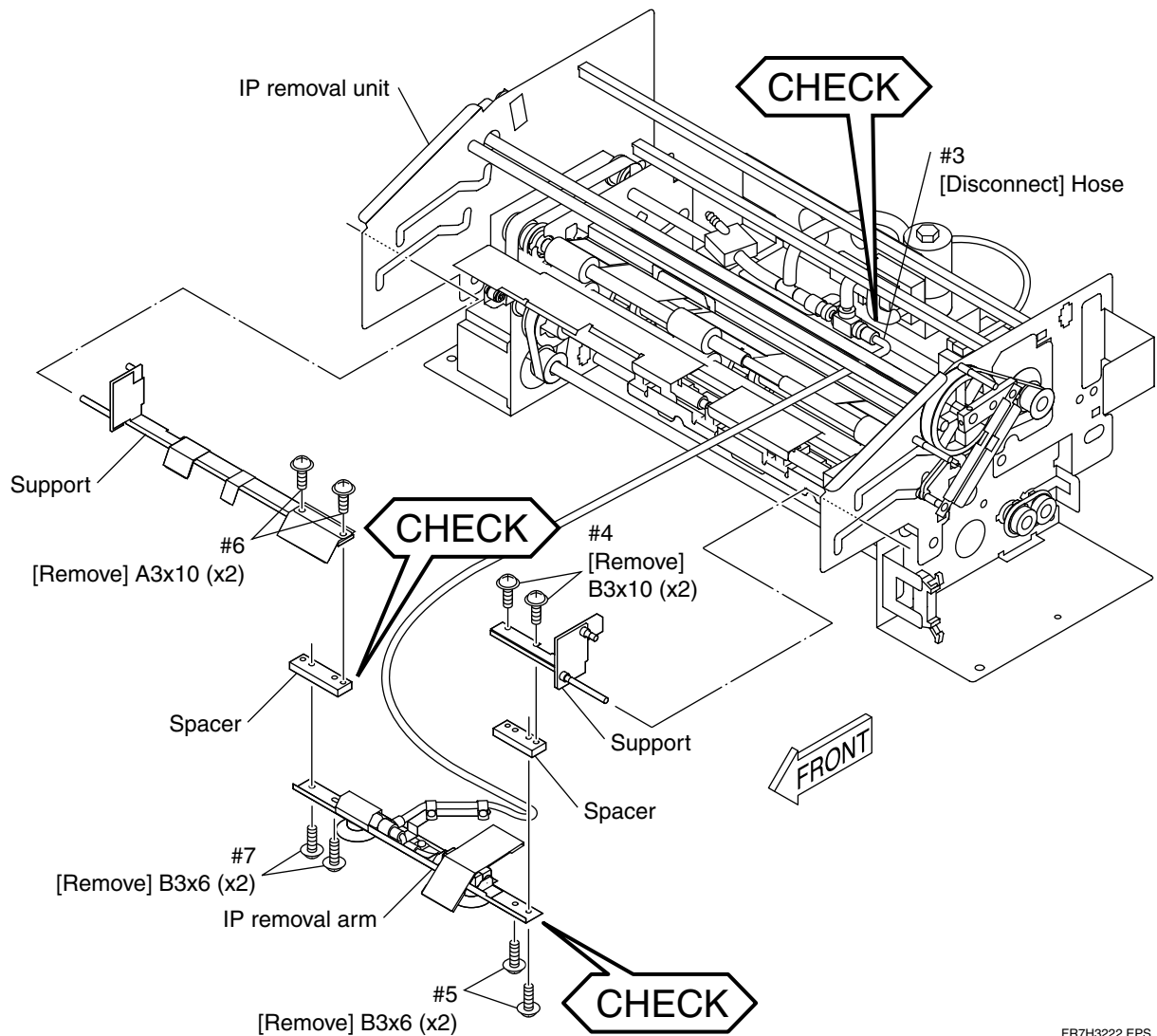
- (1) Remove the cassette set unit.  
    ☞ “4.1 Cassette Set Unit”
- (2) Remove the supports.



FR7H3221.EPS



FR7H3260.EPS



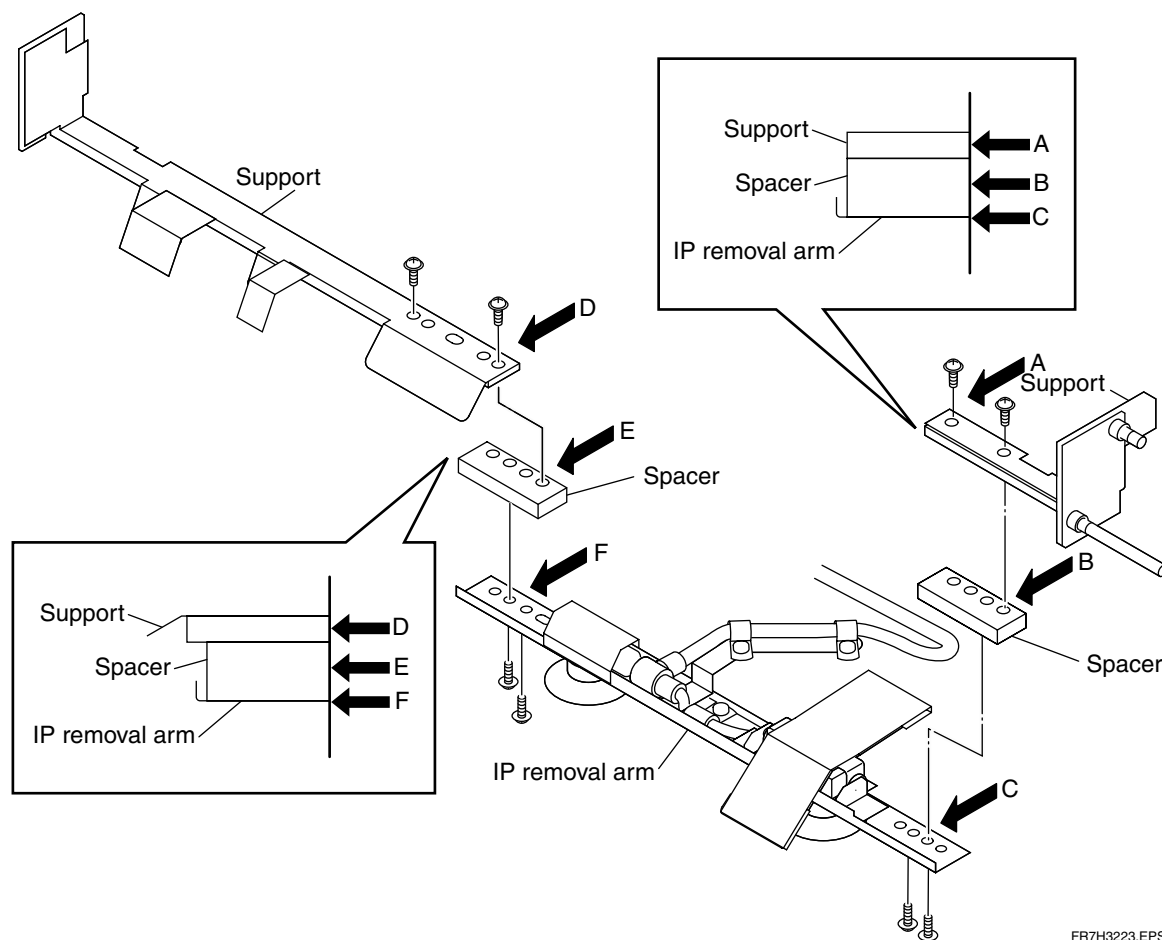
FR7H3222.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

*When mounting the supports and spacers on the IP removal arm, ensure that surfaces A, B, and C are flush with each other. Also, ensure that surfaces D, E, and F are flush with each other.*

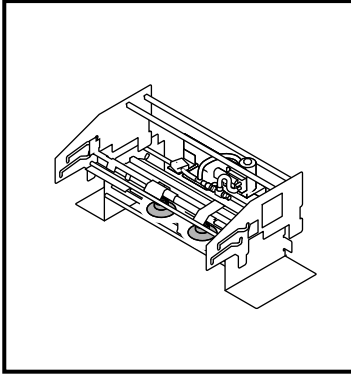


## ■ Check procedure

After completion of support installation, conduct the following checks:

- Check that IP removal arm surfaces A and D are flush with each other.
- Check that the forward and backward slides of the IP removal arm are smooth and that the bearings and other parts are not displaced.
- Slide the IP removal arm forward and backward to check that the hose does not interfere with the other parts or become twisted.

## 5.11 Suction Cups



FR7H3026.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.  
☞ “4.1 Cassette Set Unit”
- (2) Remove the IP removal arm.  
☞ “5.10 Supports (for IP Removal Arm)”

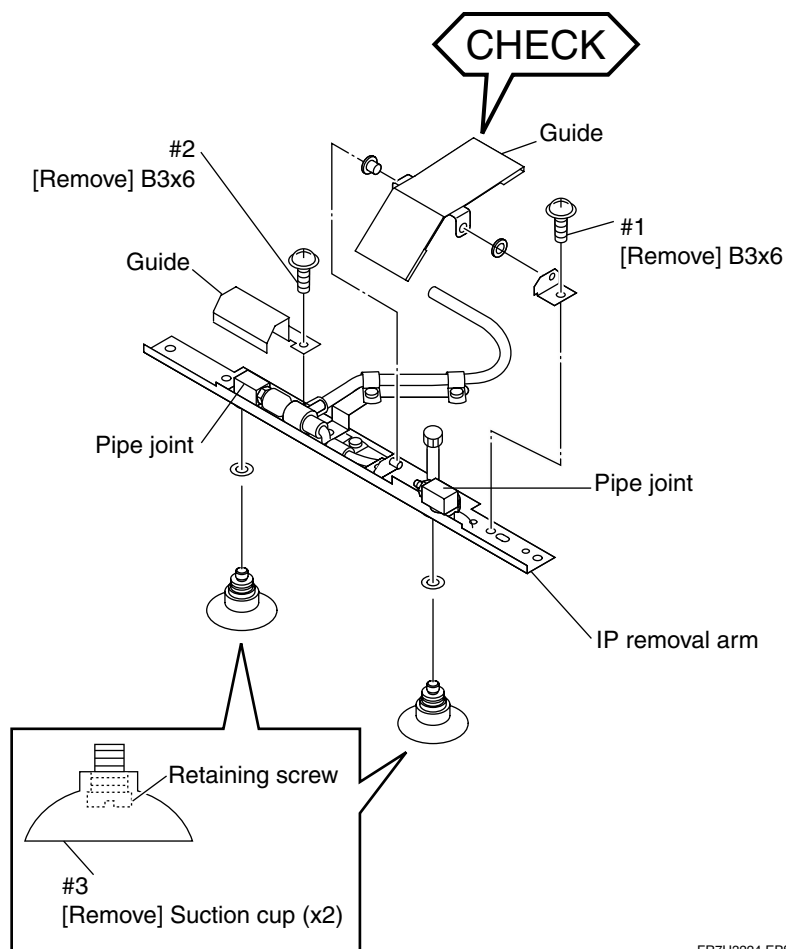
### ◆ NOTE ◆

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*When removing a suction cup, hold its pipe joint with a wrench or the like.*

---

(3) Remove the suction cups.



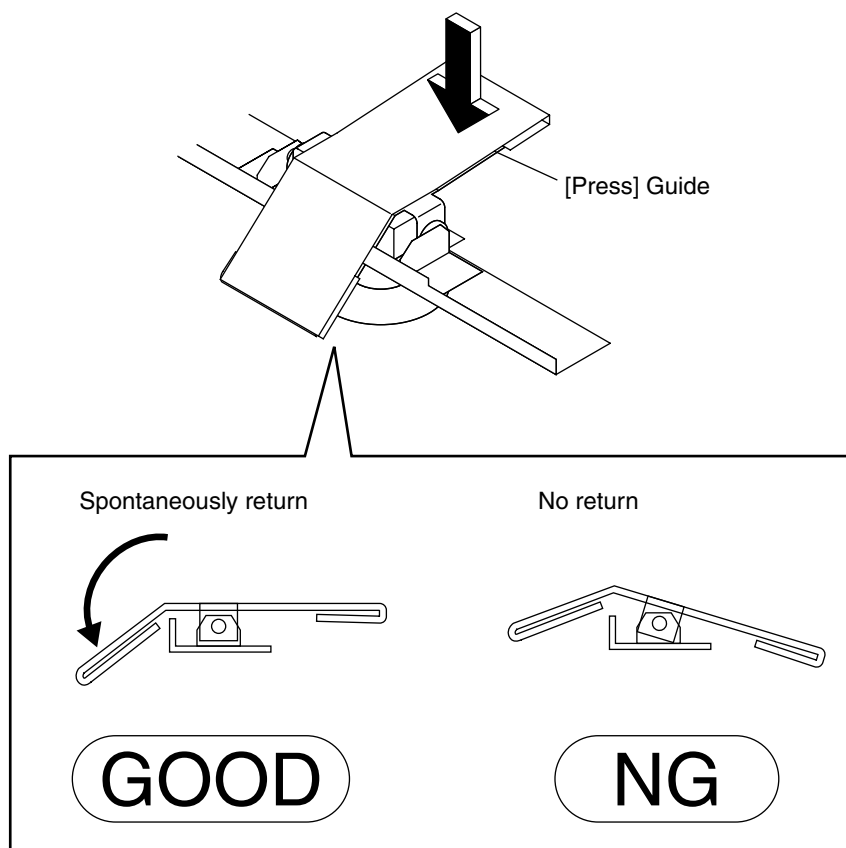
FR7H3224.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

**■ Check procedure**

Press the rear end of the guide to check that the guide spontaneously returns to its original position.

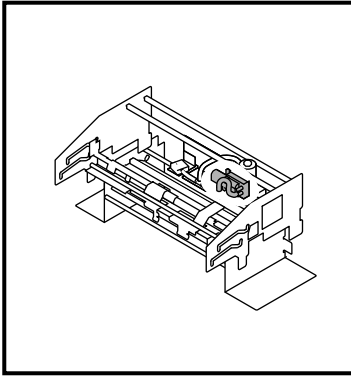


FR7H3263.EPS

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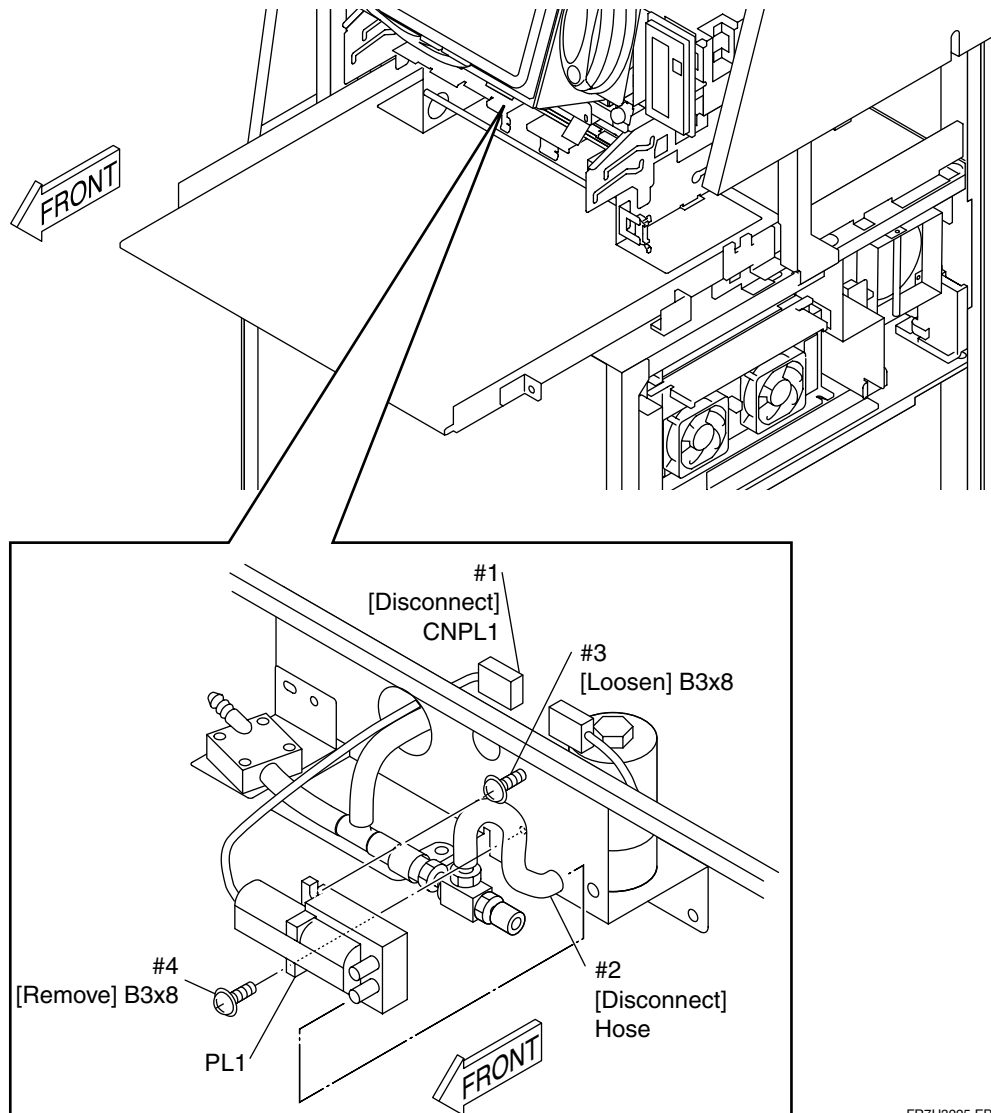
## 5.12 IP Suction Pump (PL1)



FR7H3027.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.  
 "4.1 Cassette Set Unit"
- (2) Remove the IP suction pump (PL1).



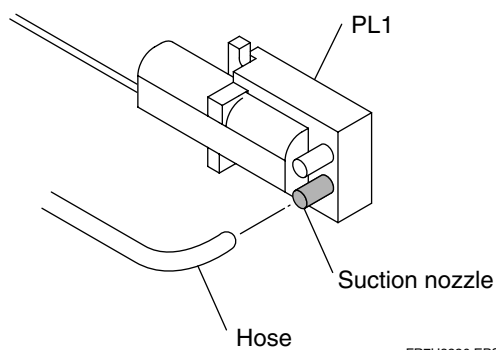
FR7H3225.EPS

## ■ Installation procedure

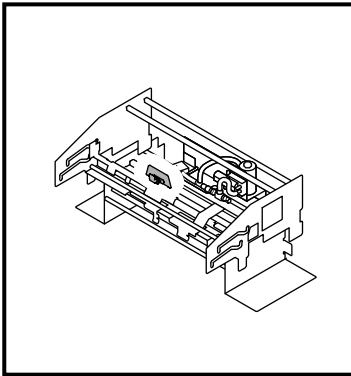
To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

*To establish a hose connection, connect the hose to the PL1 suction nozzle (the lower one of the two nozzles).*



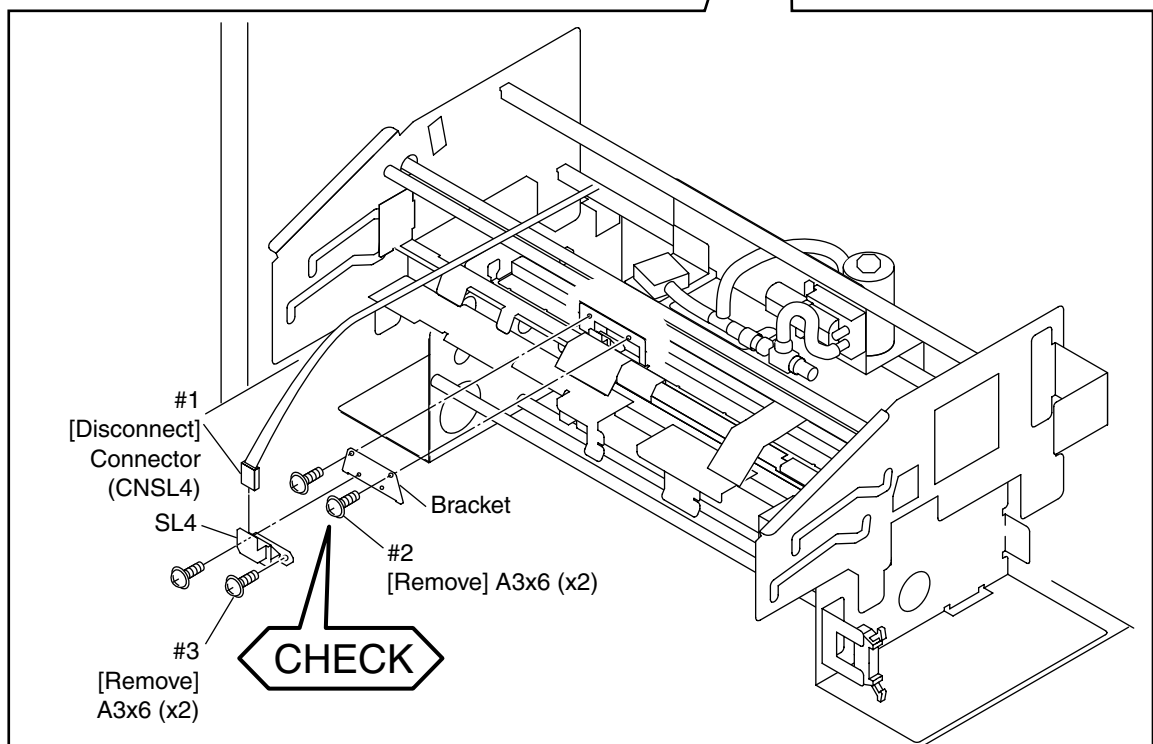
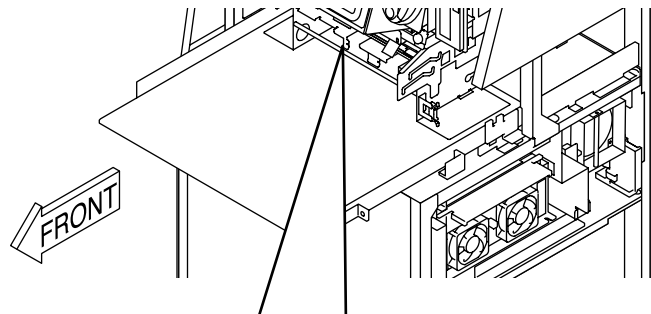
## 5.13 Inch/Metric Sensor (SL4)



FR7H3028.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.  
☞ “4.1 Cassette Set Unit”
- (2) Remove the inch/metric sensor (SL4).



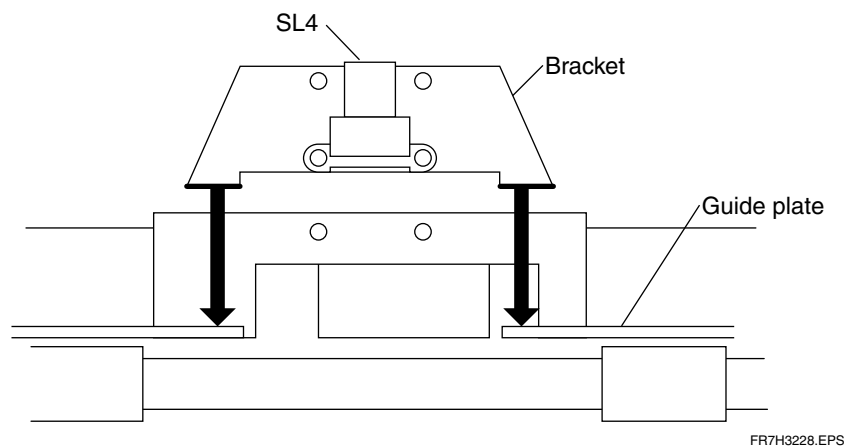
FR7H3227.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

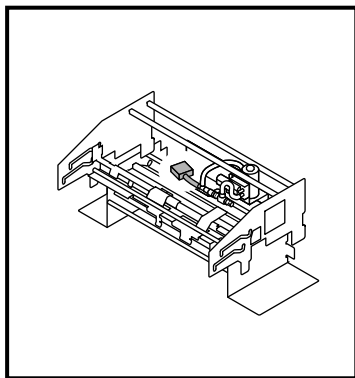
*When installing the SL4, ensure that the bottom surface of the SL4 mounting bracket is in contact with the guide plate.*



## ■ Check procedure


Check that there is no gap between the SL4 mounting bracket and guide plate.

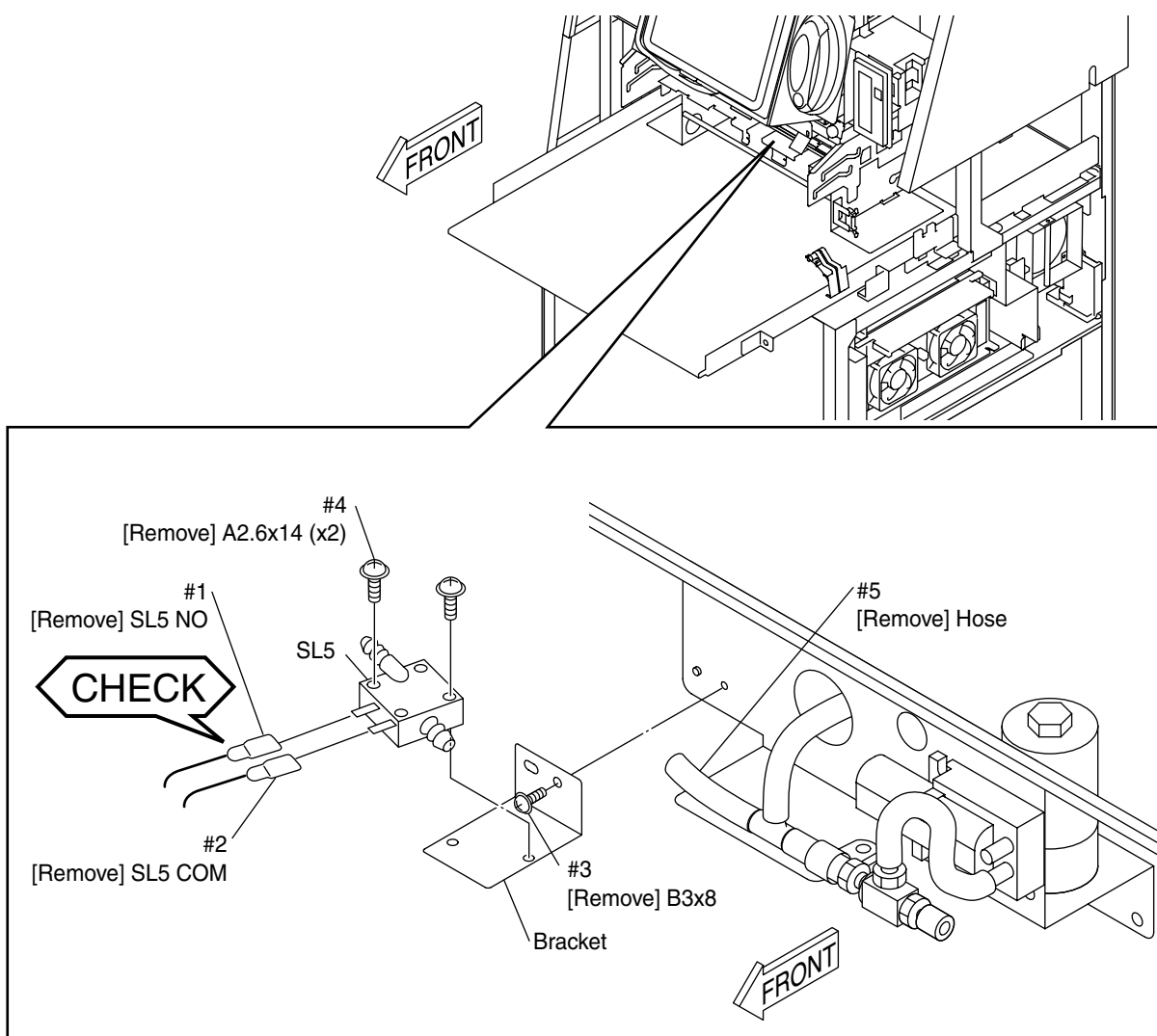
## 5.14 Suction Sensor (SL5)



FR7H3029.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.  
 "4.1 Cassette Set Unit"
- (2) Remove the suction sensor (SL5).



FR7H3229.EPS

## ■ Installation procedure

### ◆ **NOTE** ◆

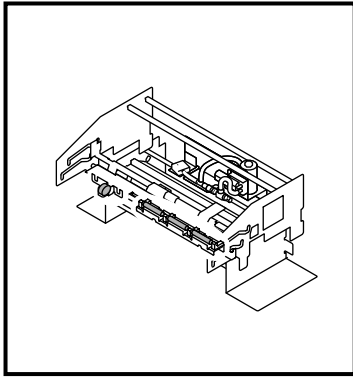
---

*When connecting the FASTON terminals (SL5 NO and SL5 COM), insert them all the way into their positions.*

---

To accomplish installation, reverse the removal procedure.

## 5.15 Receiver Rollers



FR7H3030.EPS

### ■ Removal procedure

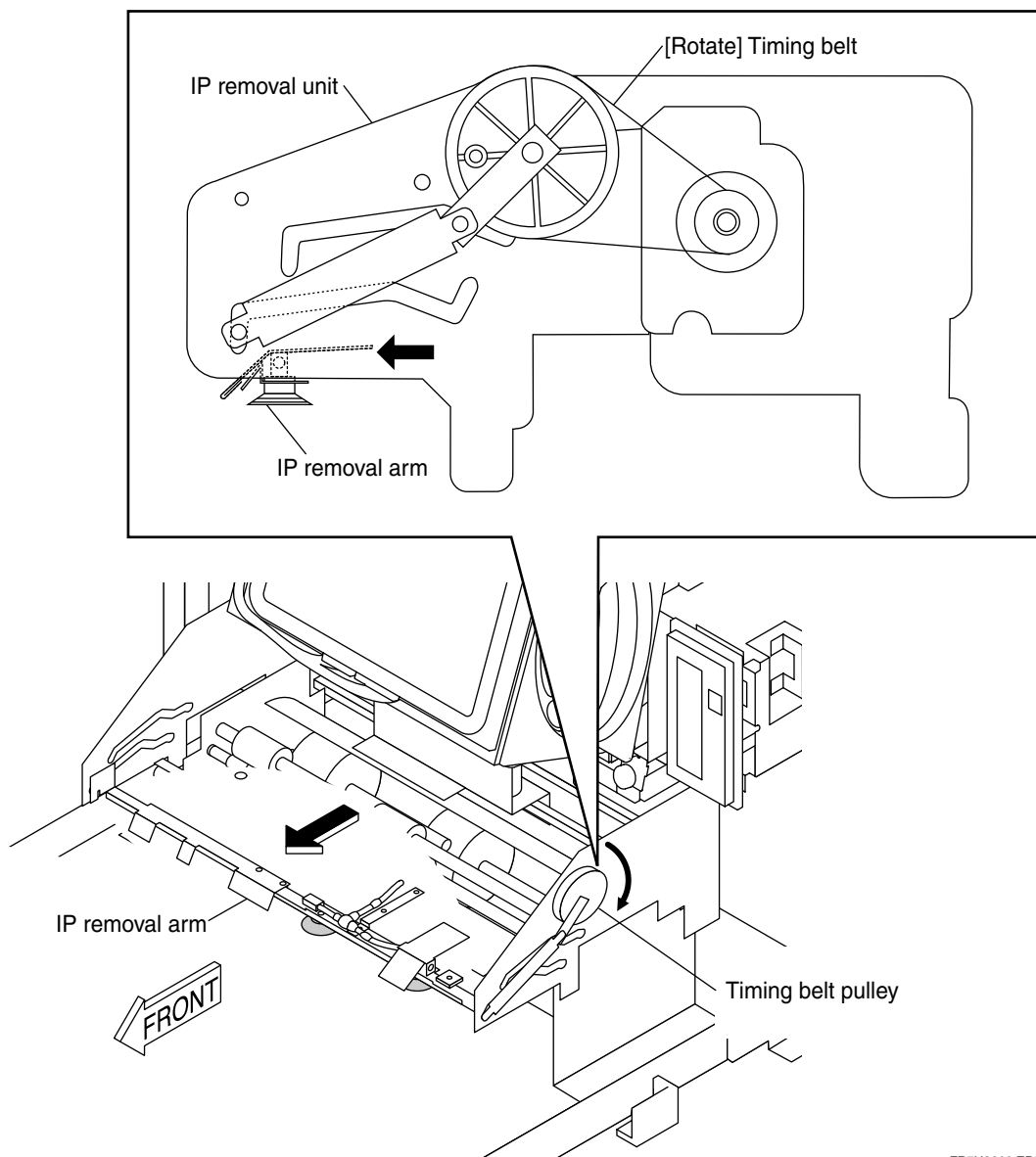
- (1) Remove the cassette set unit.

☞ “4.1 Cassette Set Unit”

**◆ NOTE ◆**

*When removing the receiver roller assemblies, ensure that the IP removal unit is positioned as indicated in the figure below.*

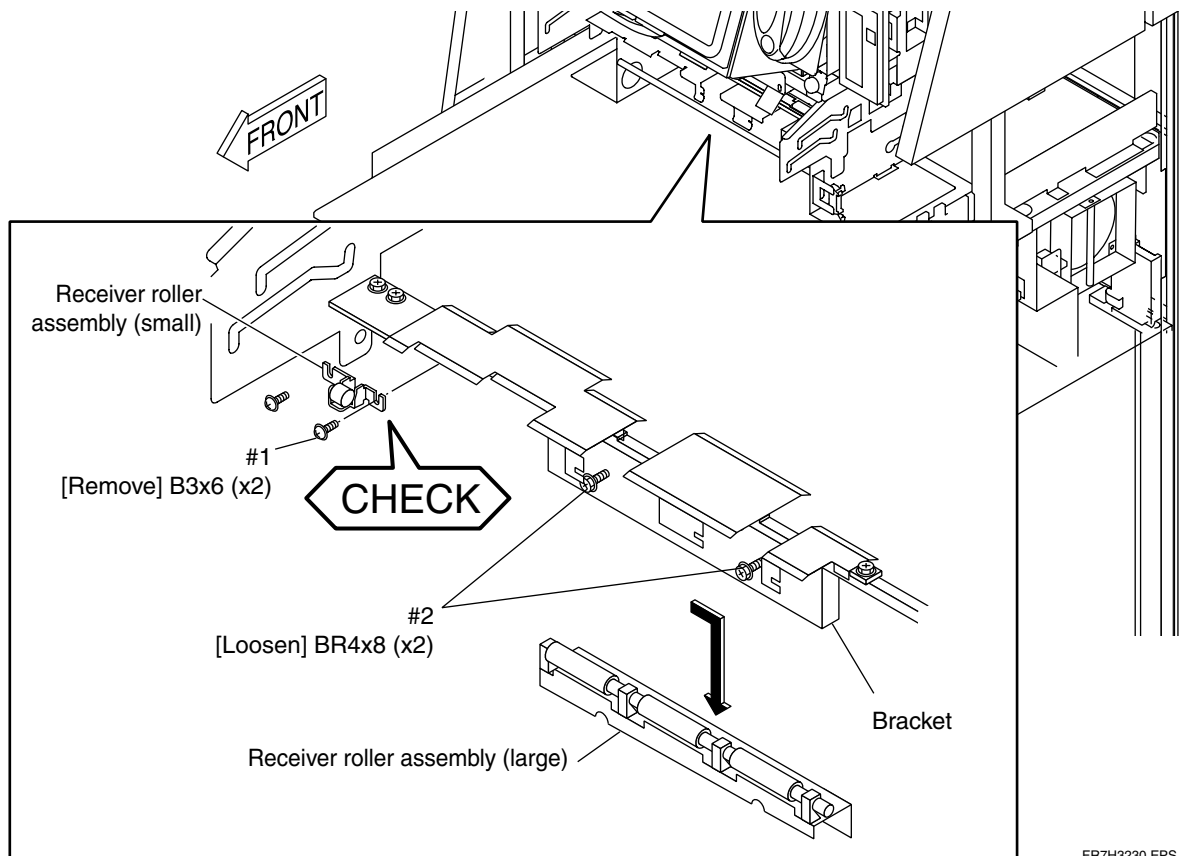
- (2) Pull the IP removal arm forward.



FR7H3262.EPS



(3) Remove the receiver roller assemblies (large and small).

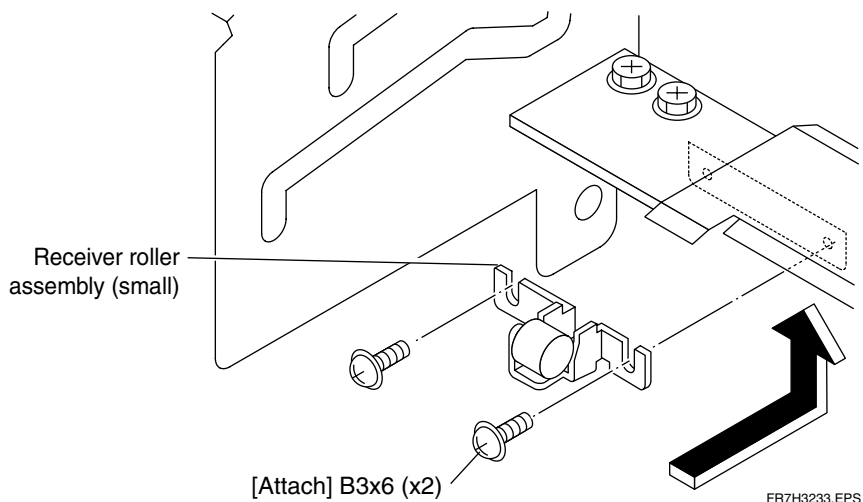


## ■ Installation procedure

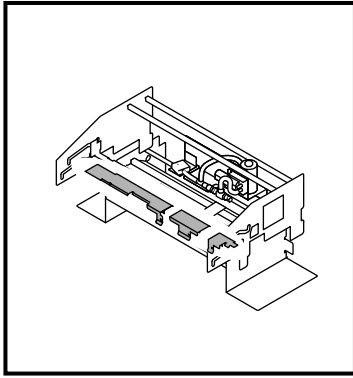
To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

*When installing the small receiver roller assembly, shift it upward and then secure it.*





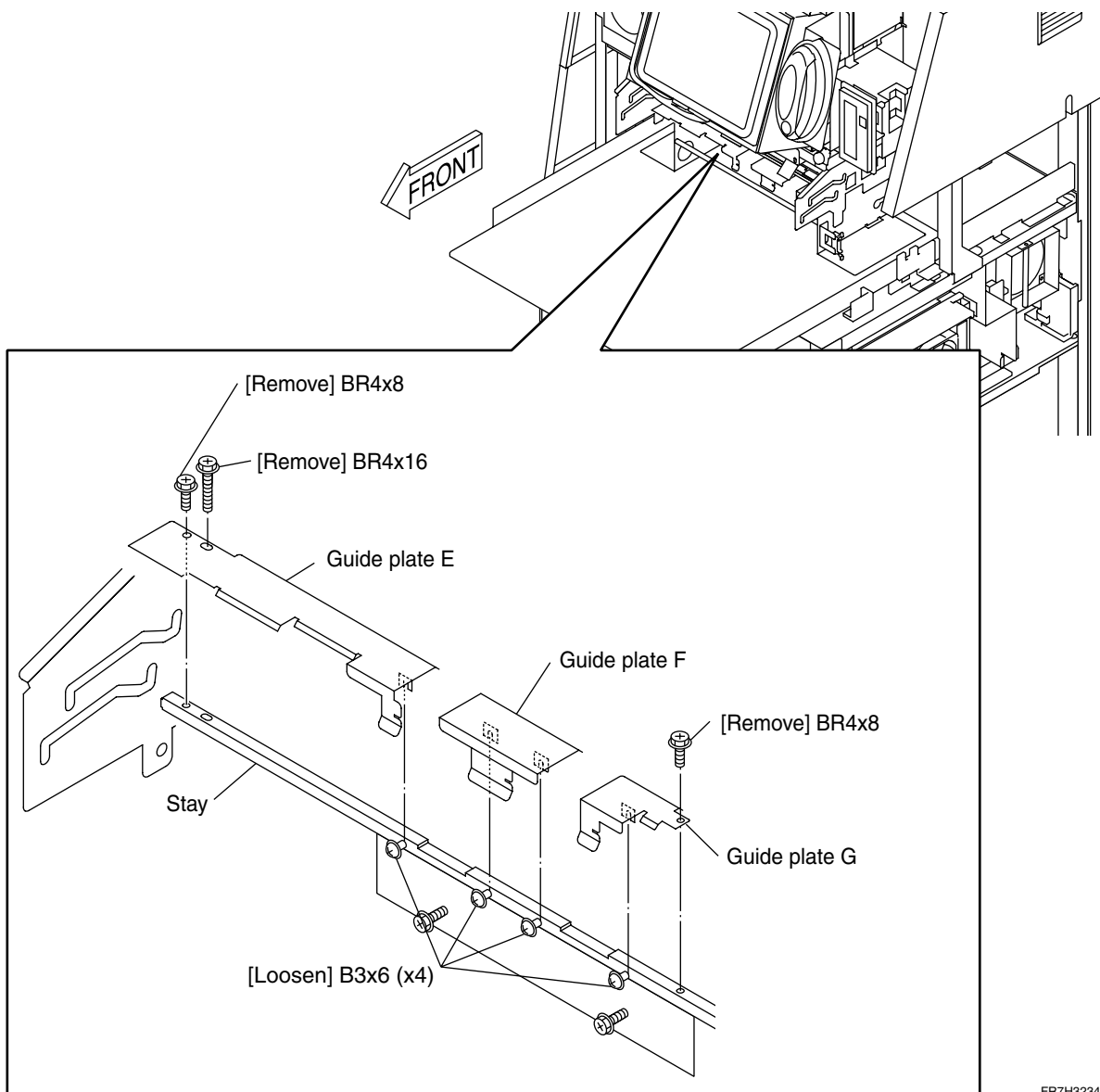
## 5.16 Guide Plates E, F, and G



FR7H3031.EPS

### ■ Removal procedure

- (1) Remove the cassette set unit.  
 "4.1 Cassette Set Unit"
- (2) Remove the receiver roller assemblies (large and small).  
 "5.15 Receiver rollers"
- (3) Remove guide plates E, F, and G.

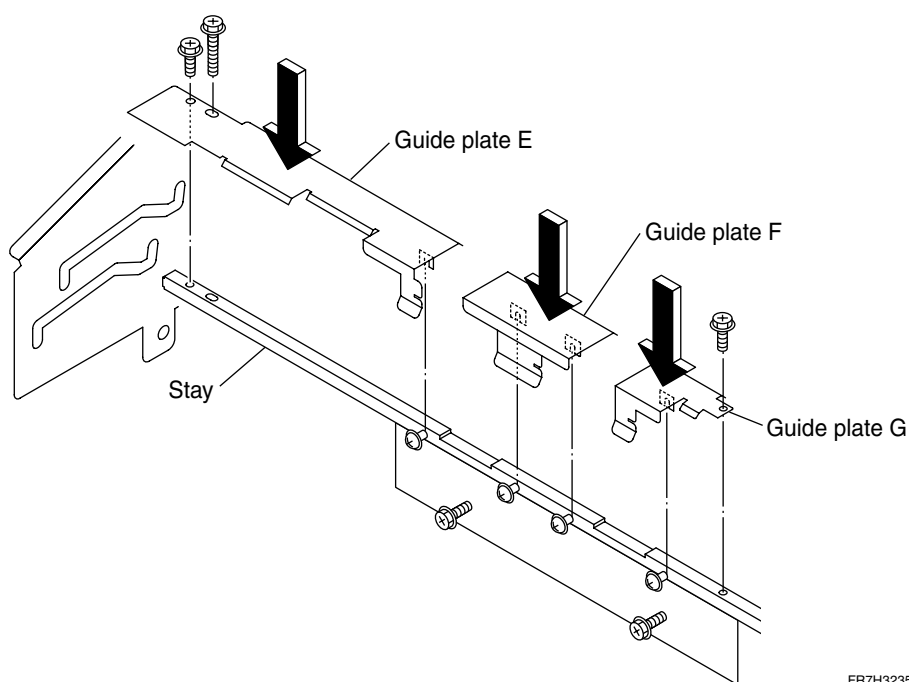


FR7H3234.EPS

## ■ Installation procedure

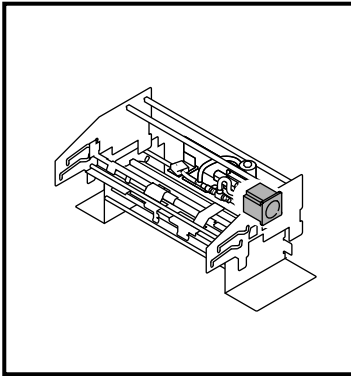
### ◆ NOTE ◆

*When installing guide plates E, F, and G, secure them while they are pressed against the stay.*



To accomplish installation, reverse the removal procedure.

## 5.17 Suction Cup Driving Motor (ML1)



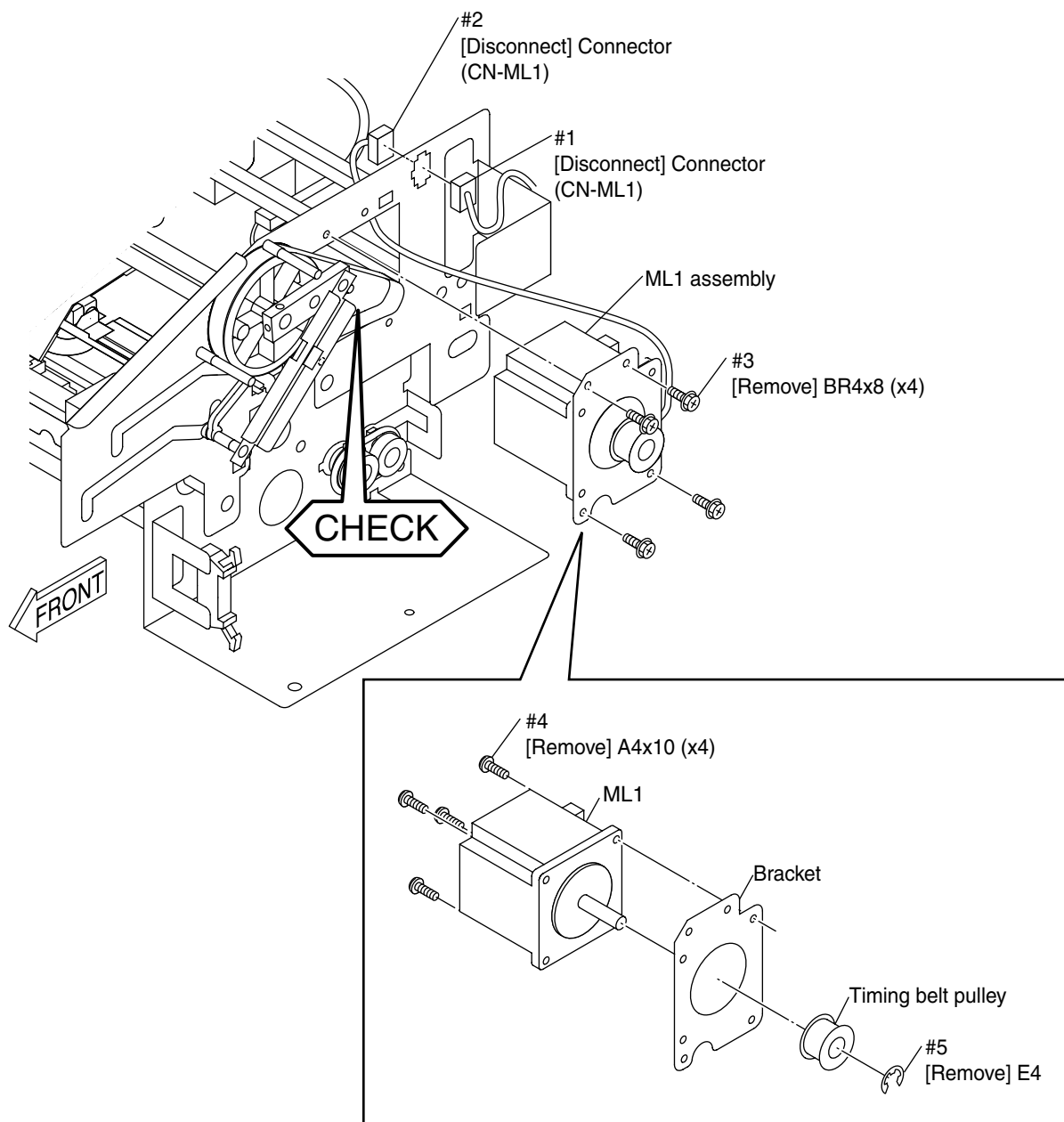
FR7H3032.EPS

### ■ Removal procedure

- (1) Remove the IP removal unit.

☞ “5.1 IP Removal Unit”

(2) Remove the suction cup driving motor (ML1).



FR7H3238.EPS

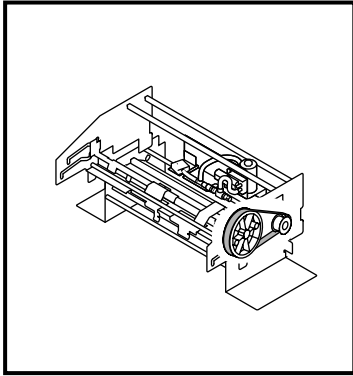
## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## ■ Check procedure

Check that the timing belt pulley for the suction cup driving motor is engaged with the timing belt.

## 5.18 Timing Belt (for Suction Cup Drive)



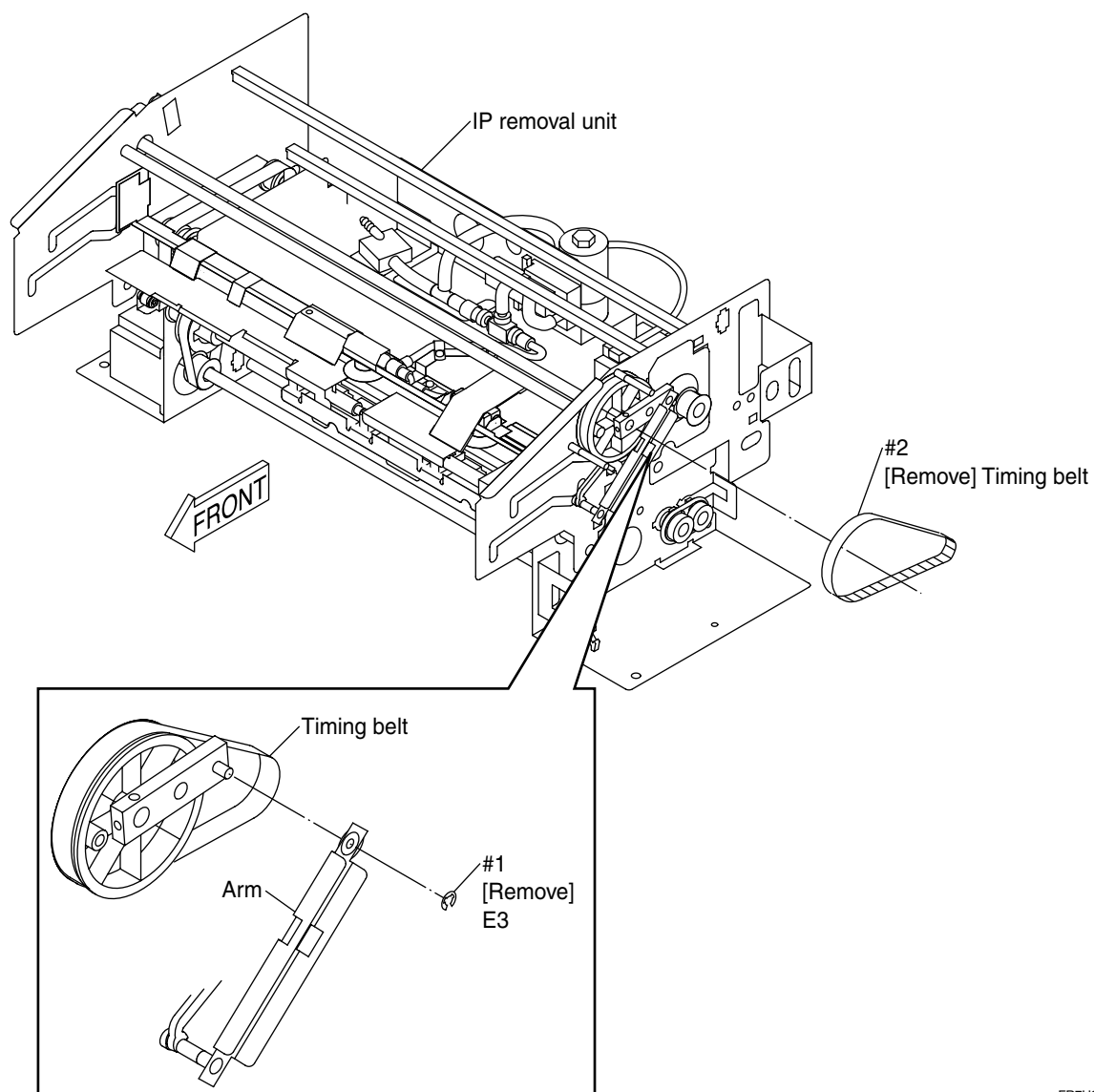
FR7H3033.EPS

### ■ Removal procedure

- (1) Remove the suction cup driving motor (ML1).

☞ “5.17 Suction Cup Driving Motor (ML1)”

(2) Remove the timing belt.



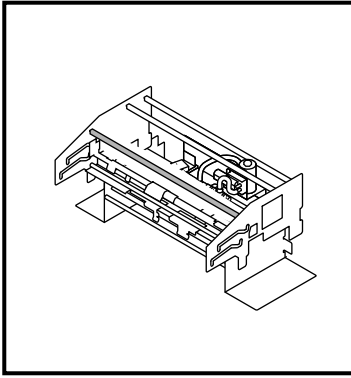
FR7H3239.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.




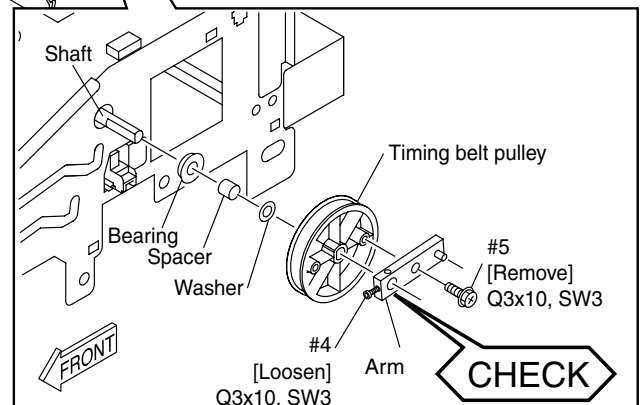
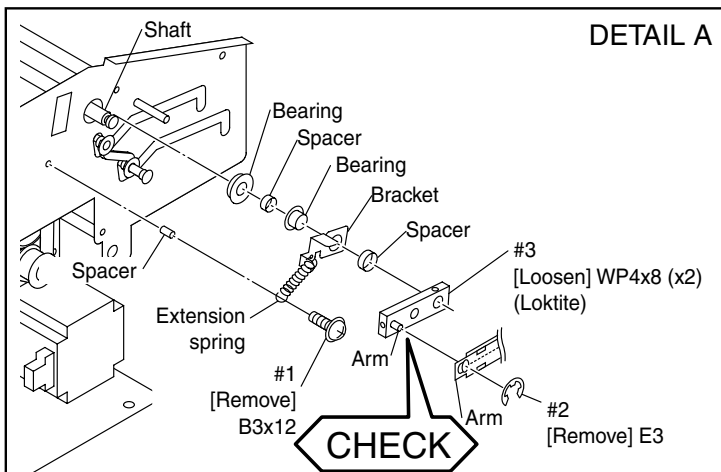
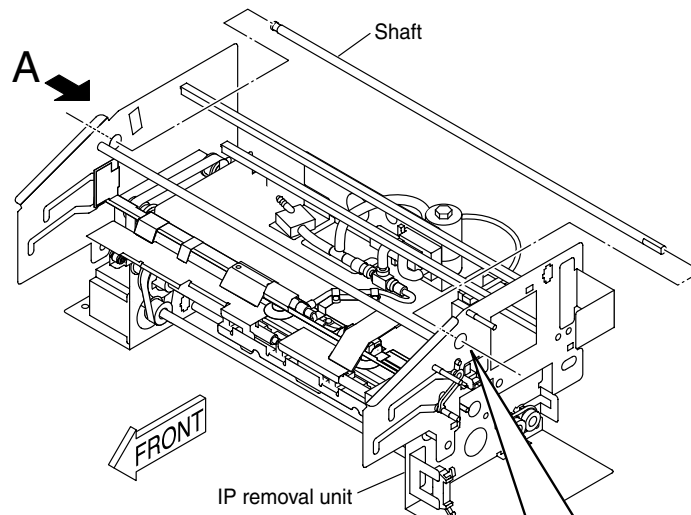
## 5.19 Shaft (for Suction Cup Drive)



FR7H3035.EPS

### ■ Removal procedure

- (1) Remove the timing belt (for suction cup drive).  
 "5.18 Timing Belt (for Suction Cup Drive)"
- (2) Remove the shaft (for suction cup drive).



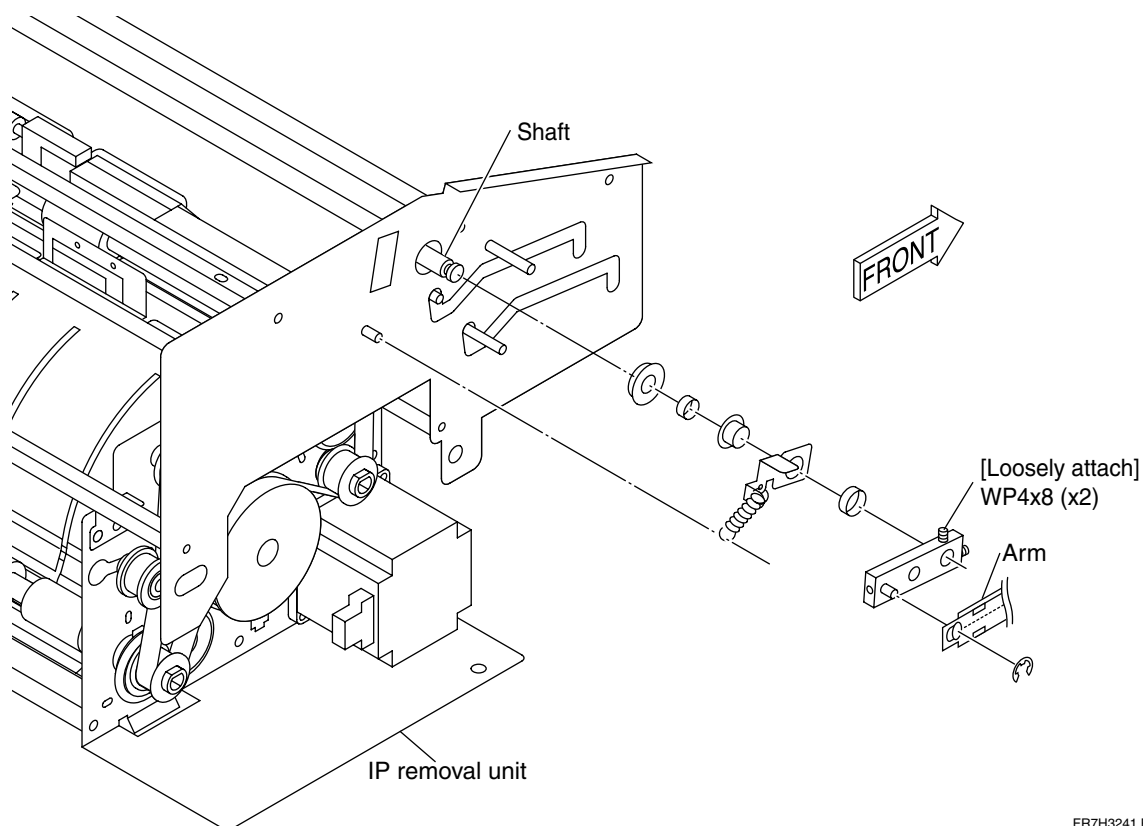
FR7H3240.EPS

## ■ Installation/adjustment procedure

(1) Install the shaft by reversing the removal procedure.

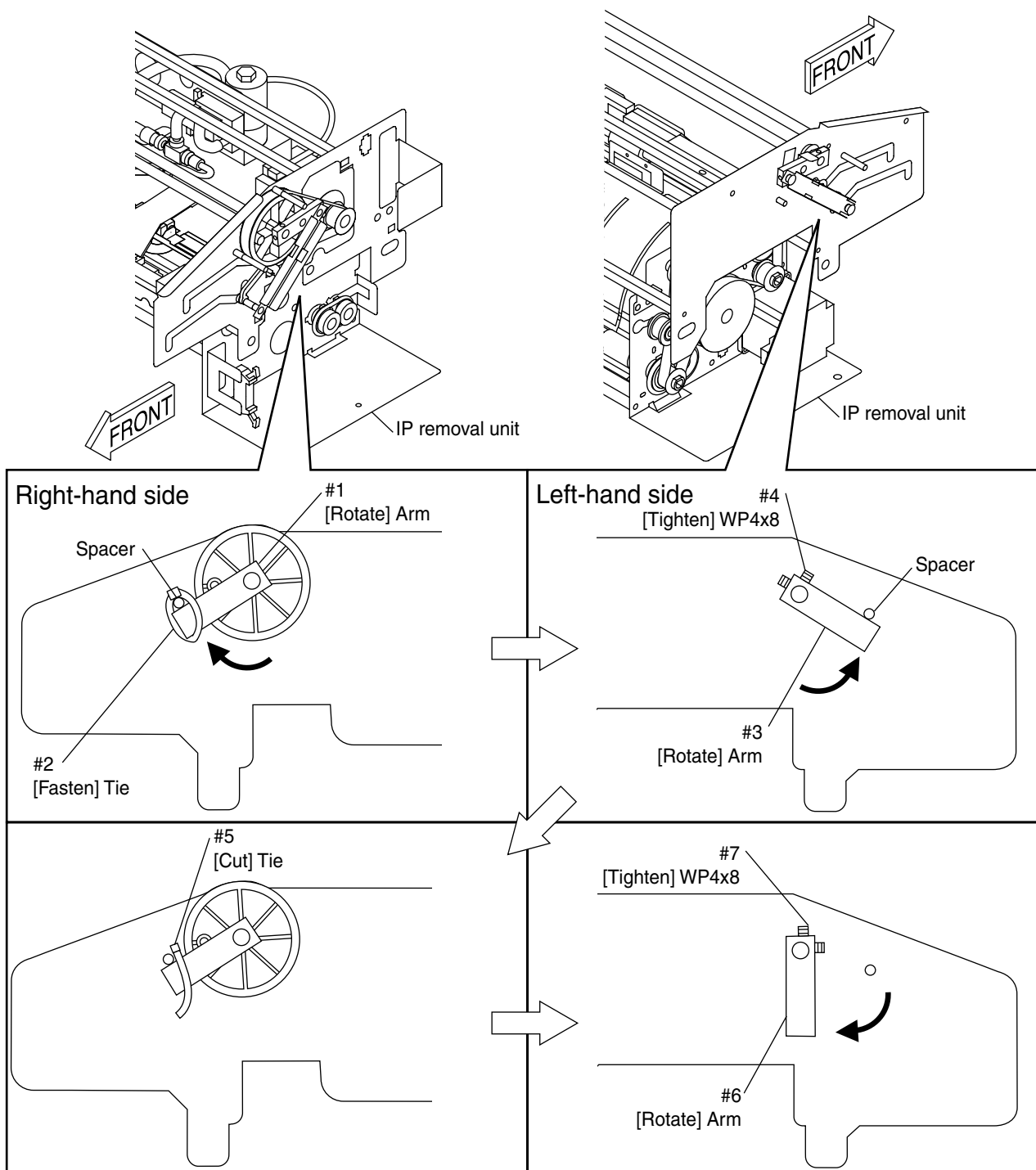
### ◆ NOTE ◆

*Loosely attach the arm screws on the left-hand side.*



FR7H3241.EPS

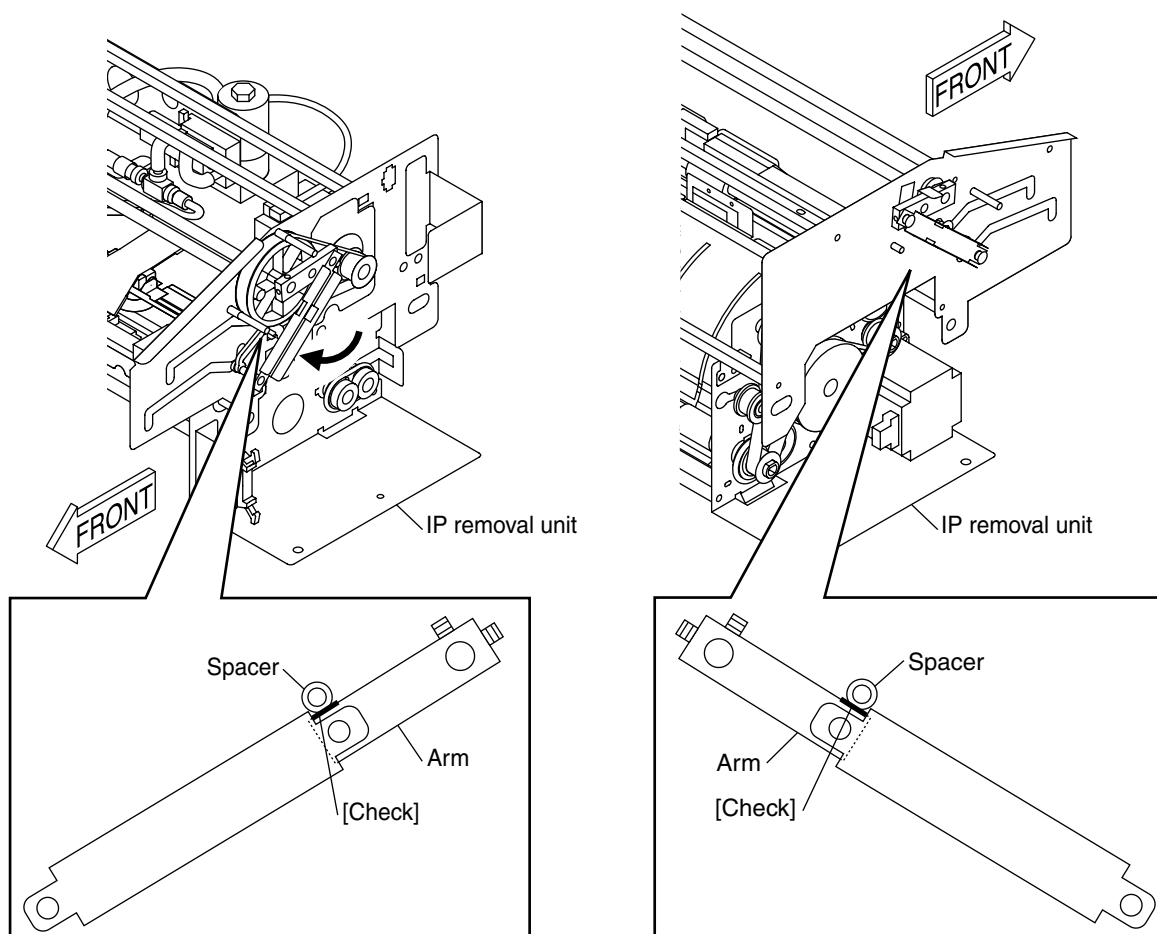
(2) Adjust the right- and left-hand side arms so that they are in phase.



FR7H3242.EPS

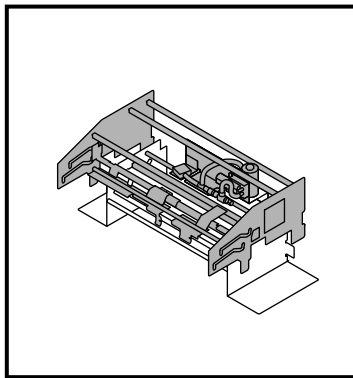
## ■ Check procedure

Check that the left-hand side arm is close contact with the spacer (with no gap between them) when the right-hand side arm comes into contact with the spacer.




FR7H3243.EPS

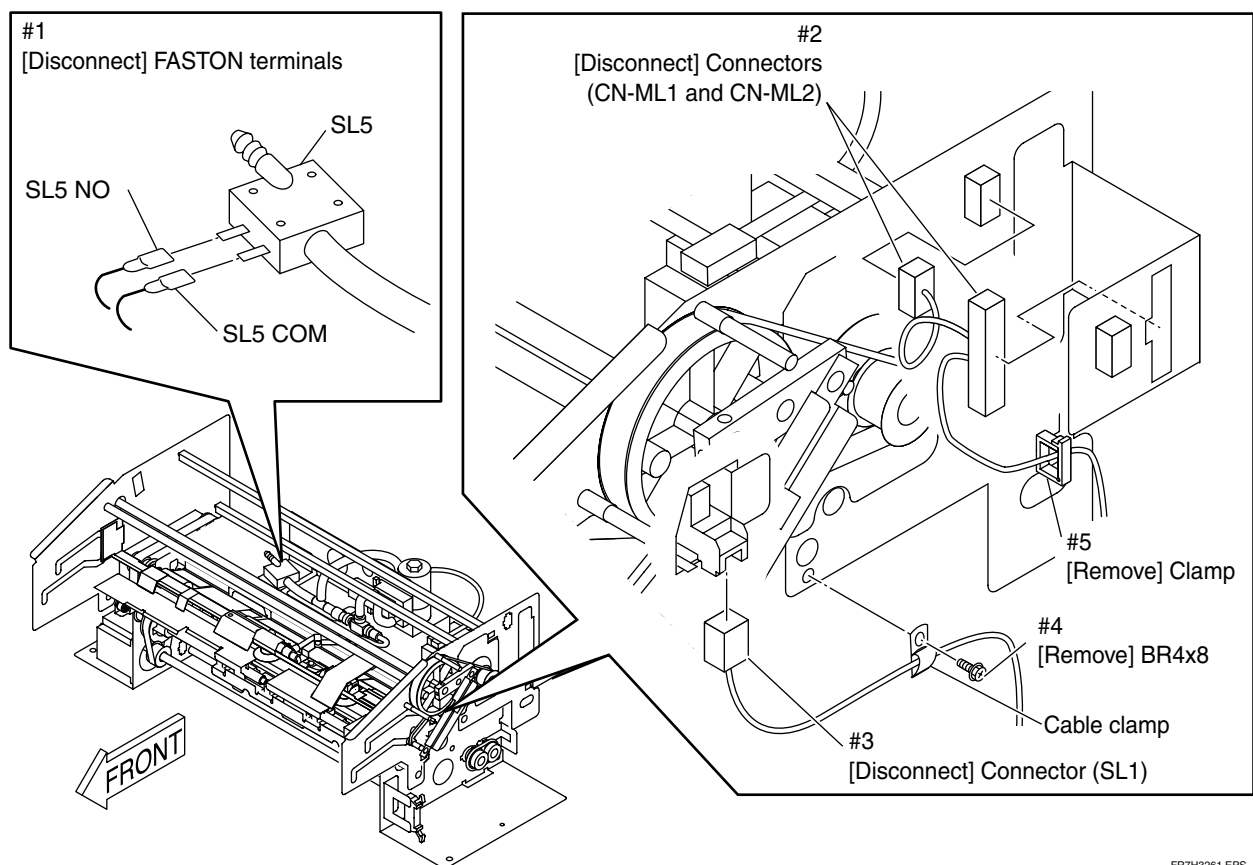
## 5.20 IP Removal Unit Upper Assembly



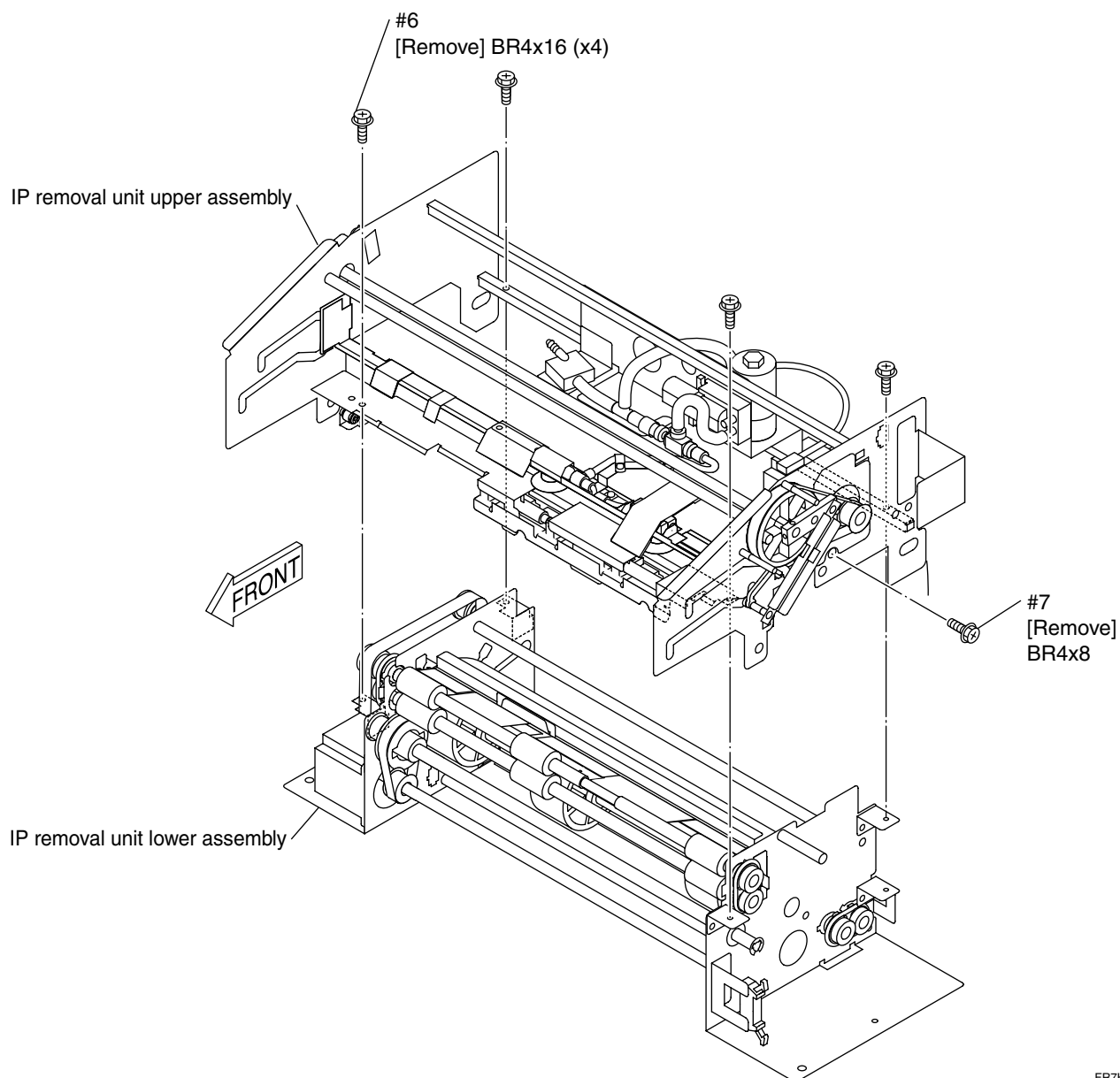
FR7H3037.EPS

### ■ Removal procedure

- (1) Remove the IP removal unit.  
 "5.1 IP Removal Unit"
- (2) Remove the IP removal unit upper assembly.



FR7H3261.EPS



FR7H3244.EPS

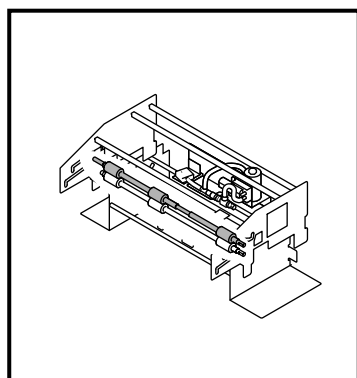
## ■ Installation procedure

### ◆ NOTE ◆

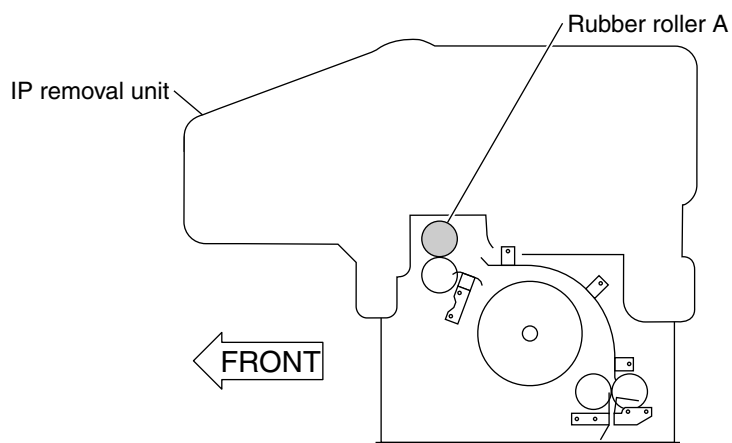
*When connecting the FASTON terminals (SL5 NO and SL5 COM), insert them all the way into their positions.*

To accomplish installation, reverse the removal procedure.

## 5.21 Rubber Roller A



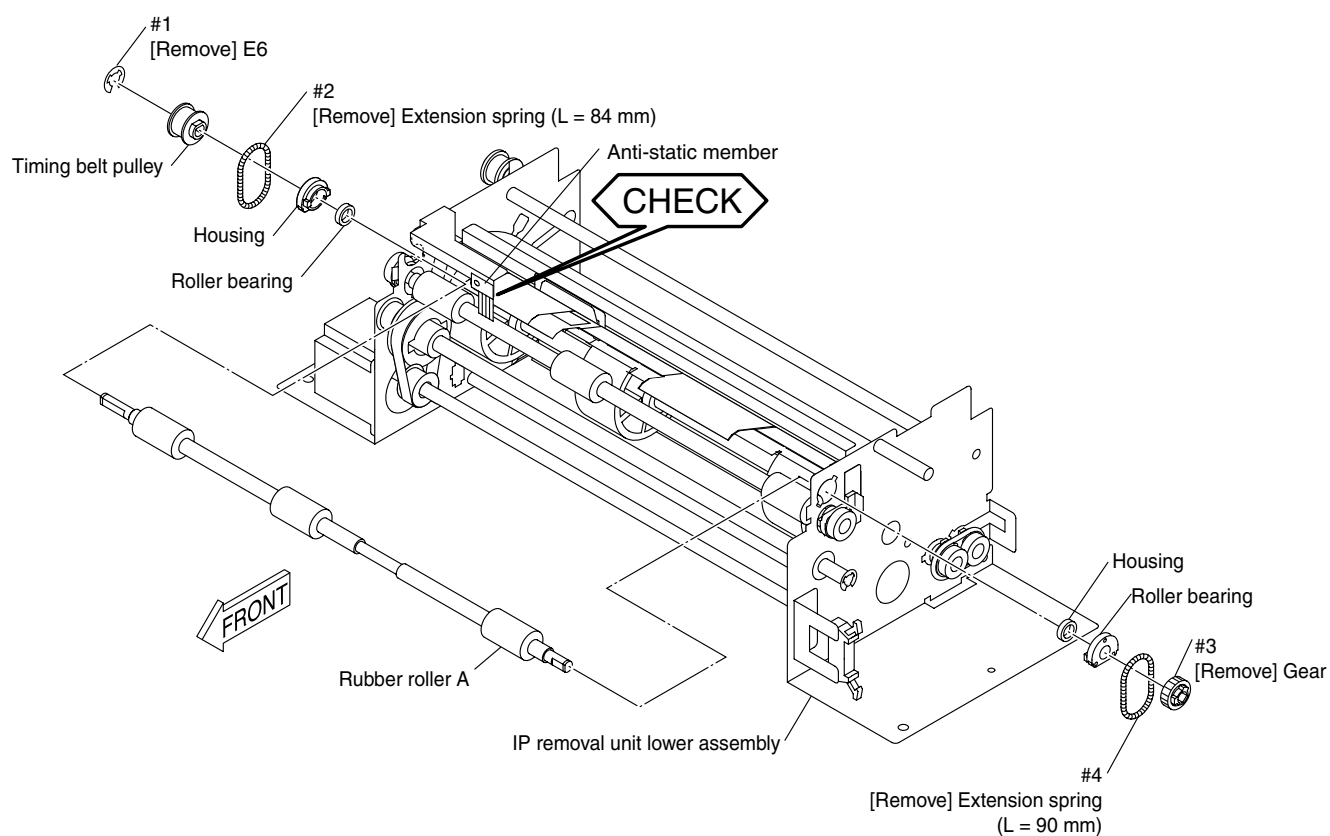
FR7H3038.EPS



FR7H3245.EPS

### ■ Removal procedure

- (1) Remove the IP removal unit upper assembly.  
 “5.20 IP Removal Unit Upper Assembly”
- (2) Remove the timing belt (for IP conveyance).  
 “5.4 Timing Belt (for IP Conveyance)”
- (3) Remove rubber roller A.



FR7H3246.EPS

**■ Installation procedure****◆ INSTRUCTION ◆**

---

*The extension spring size varies with the mounting location. Ensure that the extension springs are mounted at the correct locations.*

---

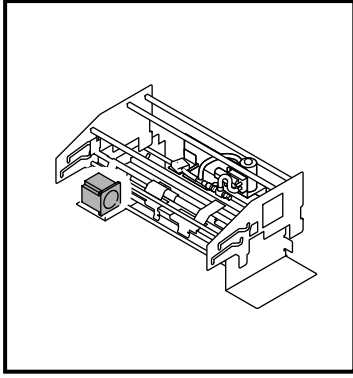
To accomplish installation, reverse the removal procedure.

**■ Check procedure**

Make sure that the anti-static member is brought into contact with the roller.



## 5.22 IP Transport Motor (ML2)



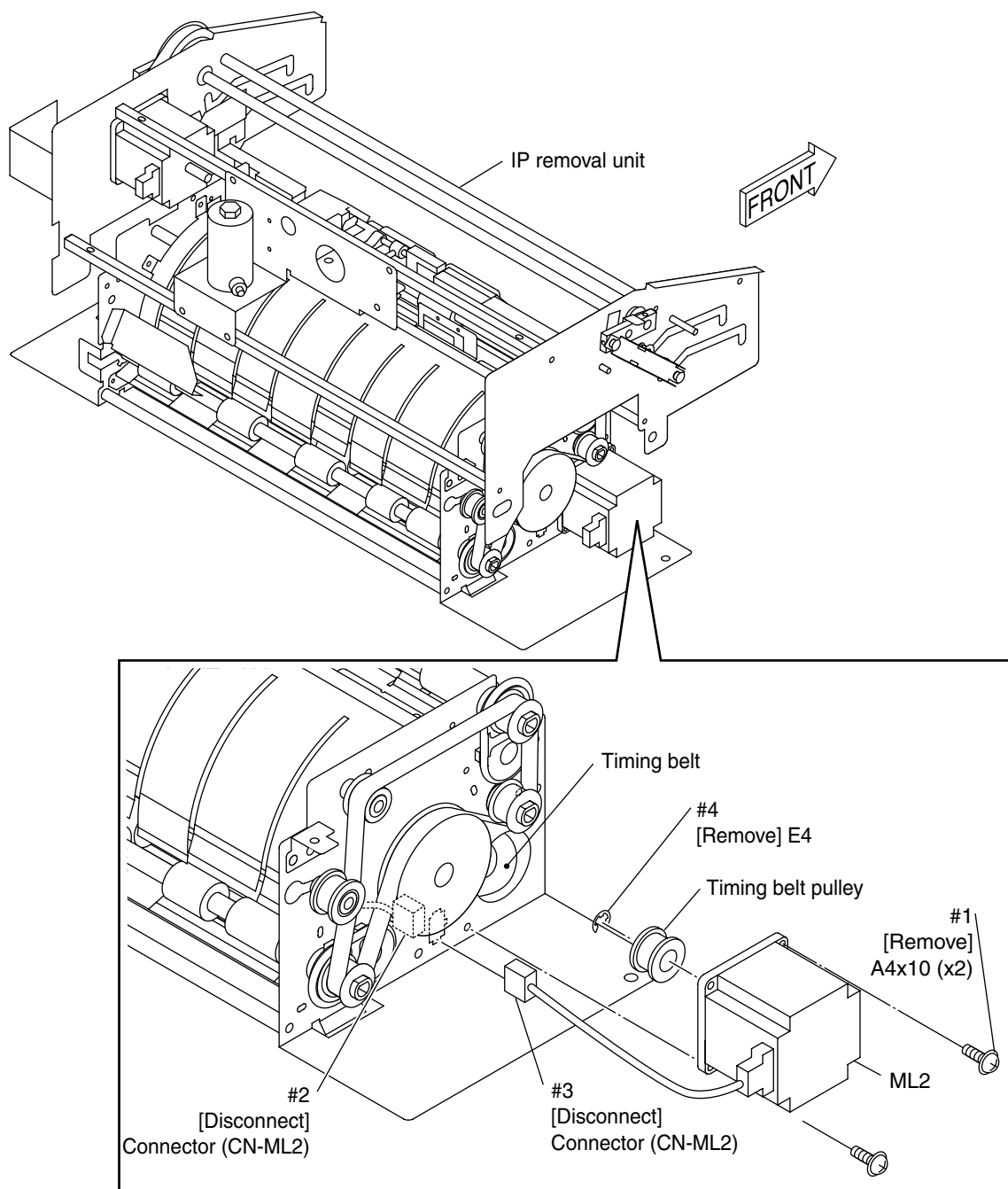
FR7H3039.EPS

### ■ Removal procedure

- (1) Remove the IP removal unit.

☞ "5.1 IP Removal Unit"

(2) Remove the IP transport motor (ML2).

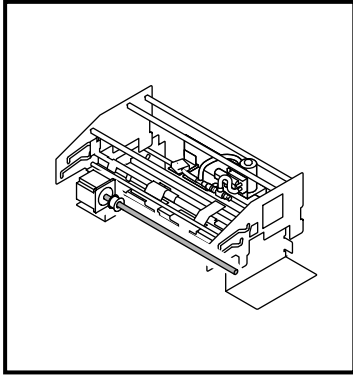


FR7H3247.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 5.23 Shaft (for IP Conveyance)



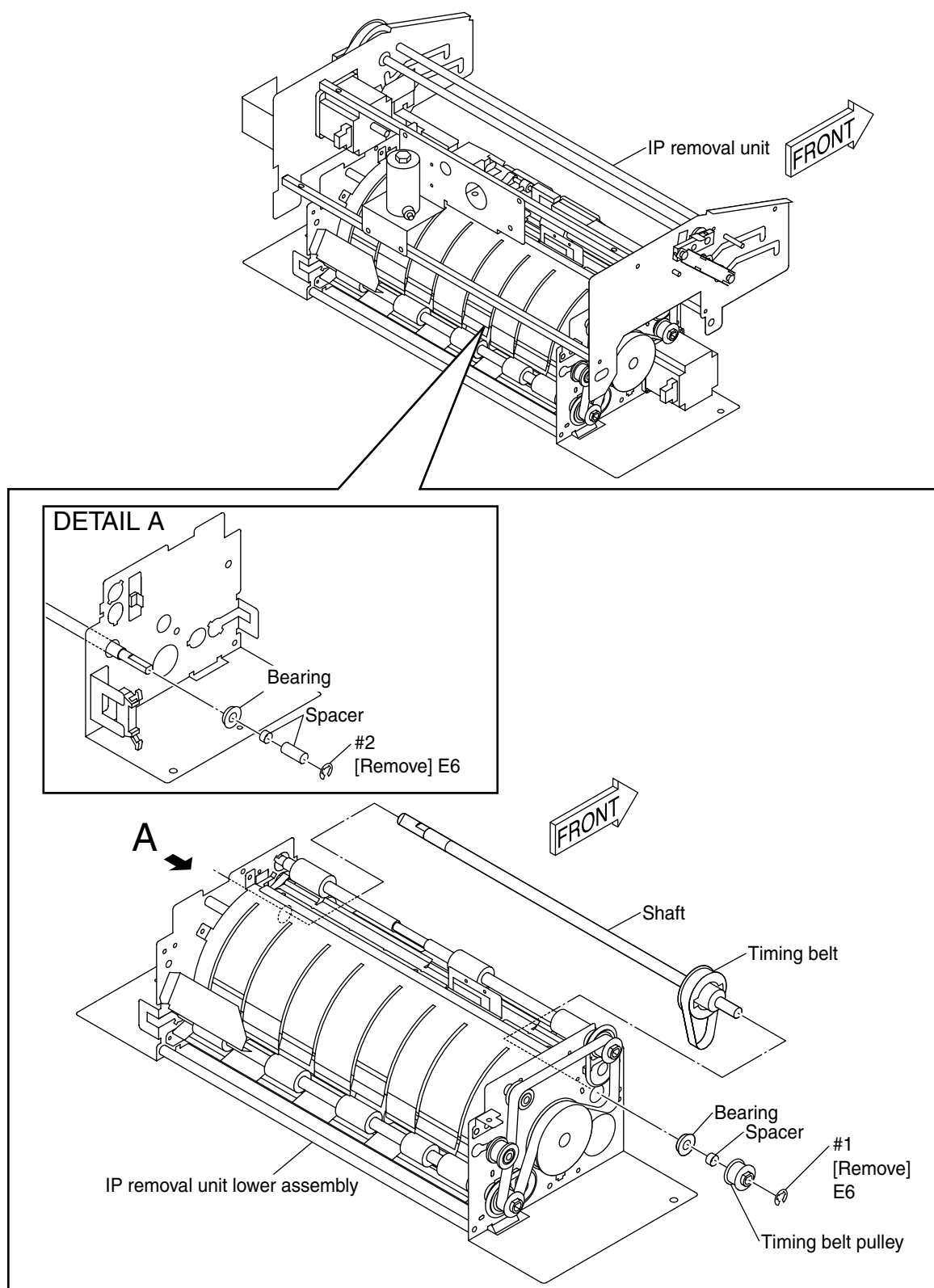
FR7H3040.EPS

### ■ Removal procedure

- (1) Remove the IP transport motor (ML2).

☞ “5.22 IP Transport Motor (ML2)”

(2) Remove the shaft (for IP conveyance).

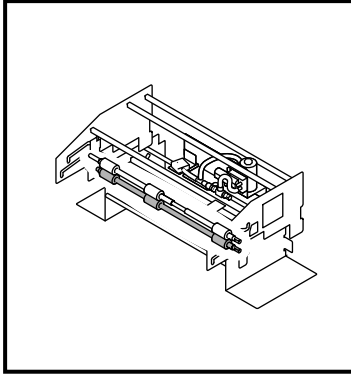


FR7H3248.EPS

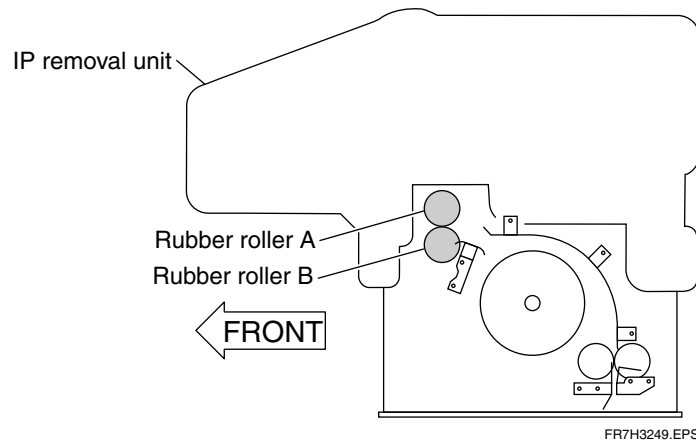
## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 5.24 Rubber Roller B



FR7H3041.EPS



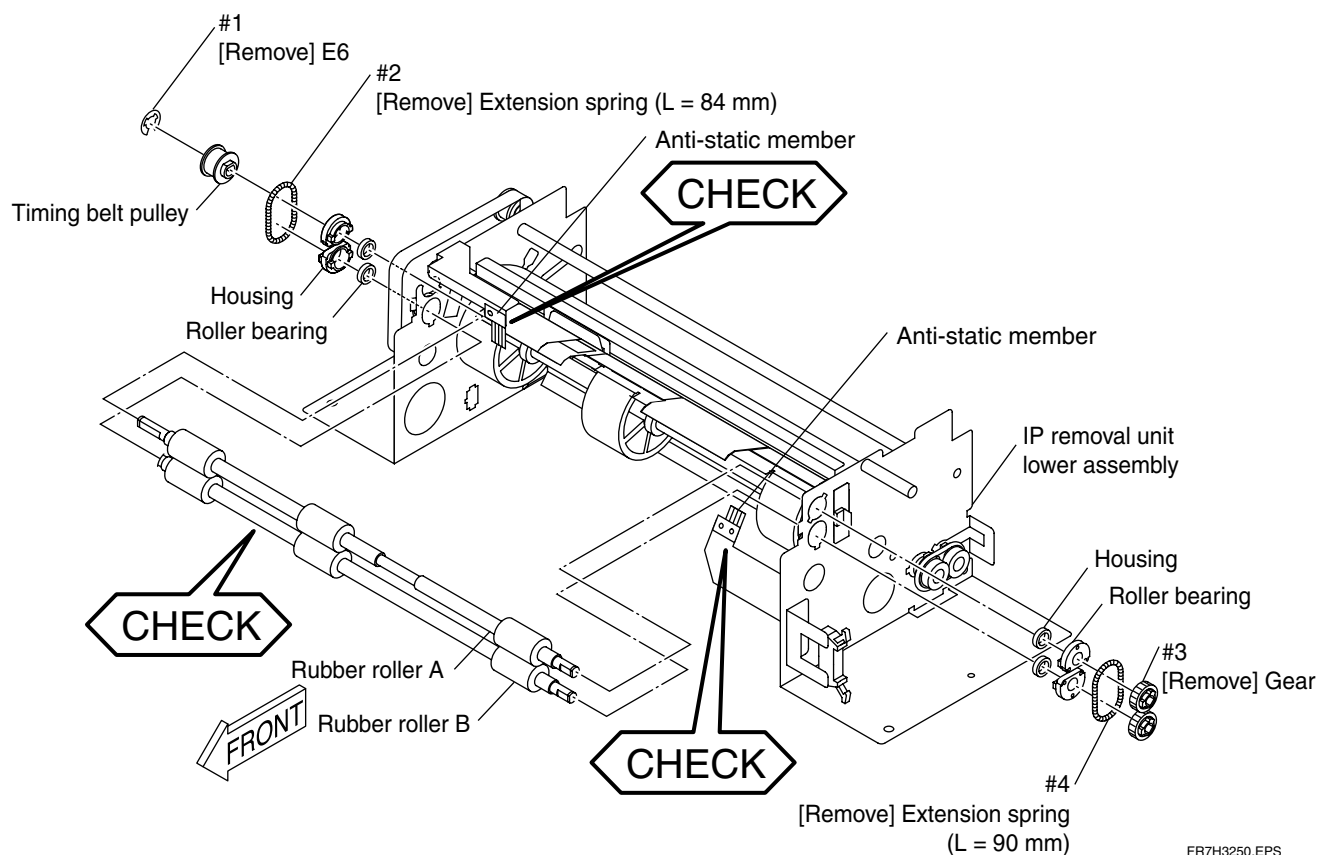
FR7H3249.EPS

### ■ Removal procedure

- (1) Remove the IP removal unit upper assembly.  
☞ “5.20 IP Removal Unit Upper Assembly”
- (2) Remove the shaft (for IP conveyance).  
☞ “5.23 Shaft (for IP Conveyance)”
- (3) Remove rubber roller B.

# ◇ REFERENCE ◇

*When removing rubber roller B, remove rubber roller A as well.*



FR7H3250.EPS

## ■ Installation procedure

### ◆ INSTRUCTION ◆

*The extension spring size varies with the mounting location. Pay due attention to the extension spring mounting locations.*

### ◆ NOTE ◆

*Ensure that the rubber rollers are not installed with right and left reversed.*

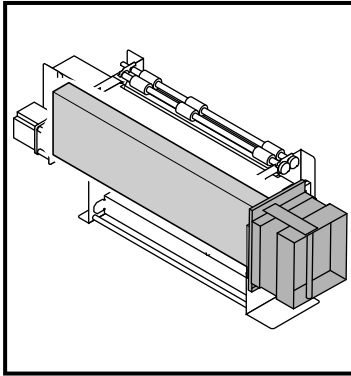
To accomplish installation, reverse the removal procedure.

## ■ Check procedure

Make sure that the anti-static member is brought into contact with the roller.

## 6. Removing and Installing the Erasure Conveyor

### 6.1 Erasure Lamp Assembly



FR7H3042.EPS



#### **CAUTION**

*Since the erasure lamp assembly may be heated to a high temperature, exercise care not to suffer burns.*

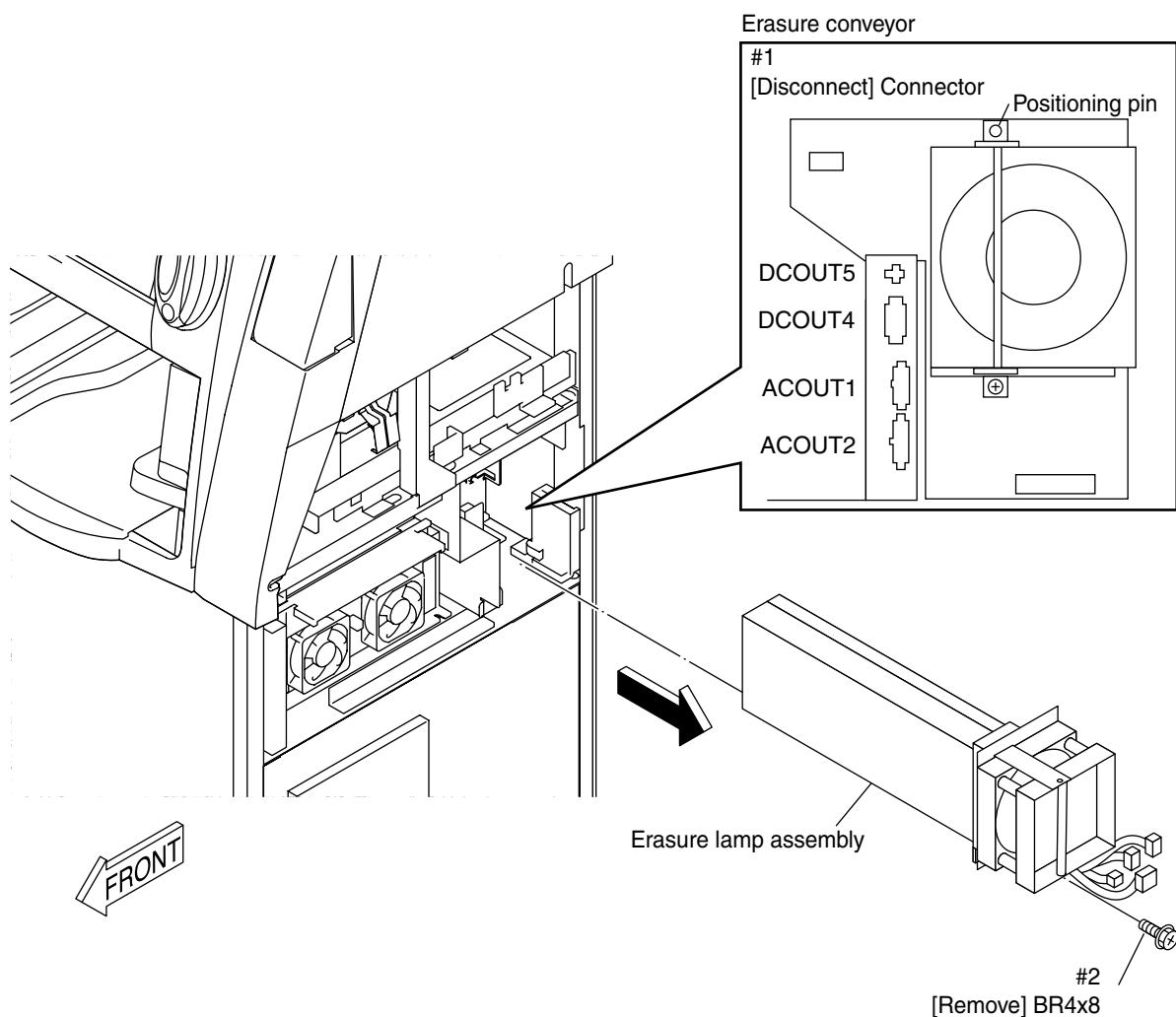
#### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover

☞ “3. Removing and Installing the Covers”

(2) Remove the erasure lamp assembly.



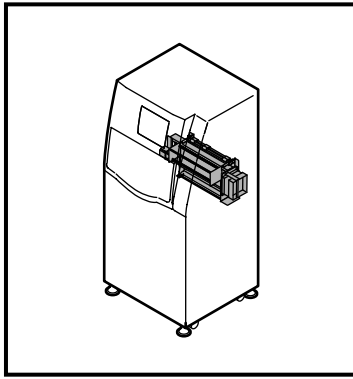
FR7H3507.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.



## 6.2 Erasure Conveyor



FR7H3043.EPS

### ■ Removal procedure

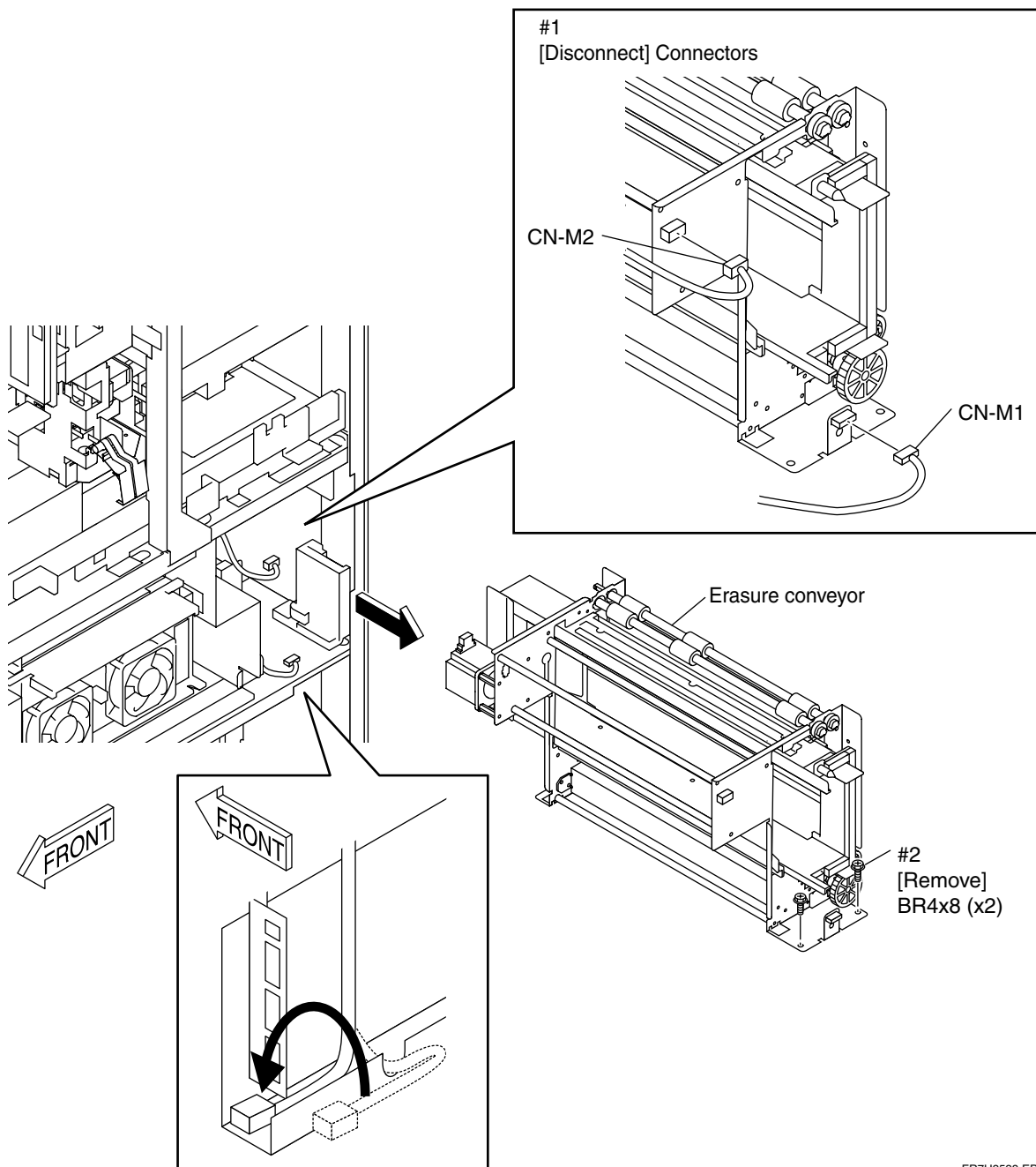
- (1) Remove the erasure lamp assembly.

☞ “6.1 Erasure Lamp Assembly”

**◇ REFERENCE ◇**

When removing the erasure conveyor, move the disconnected cables to the places indicated in the figure below.

(2) Remove the erasure conveyor.



FR7H3538.EPS

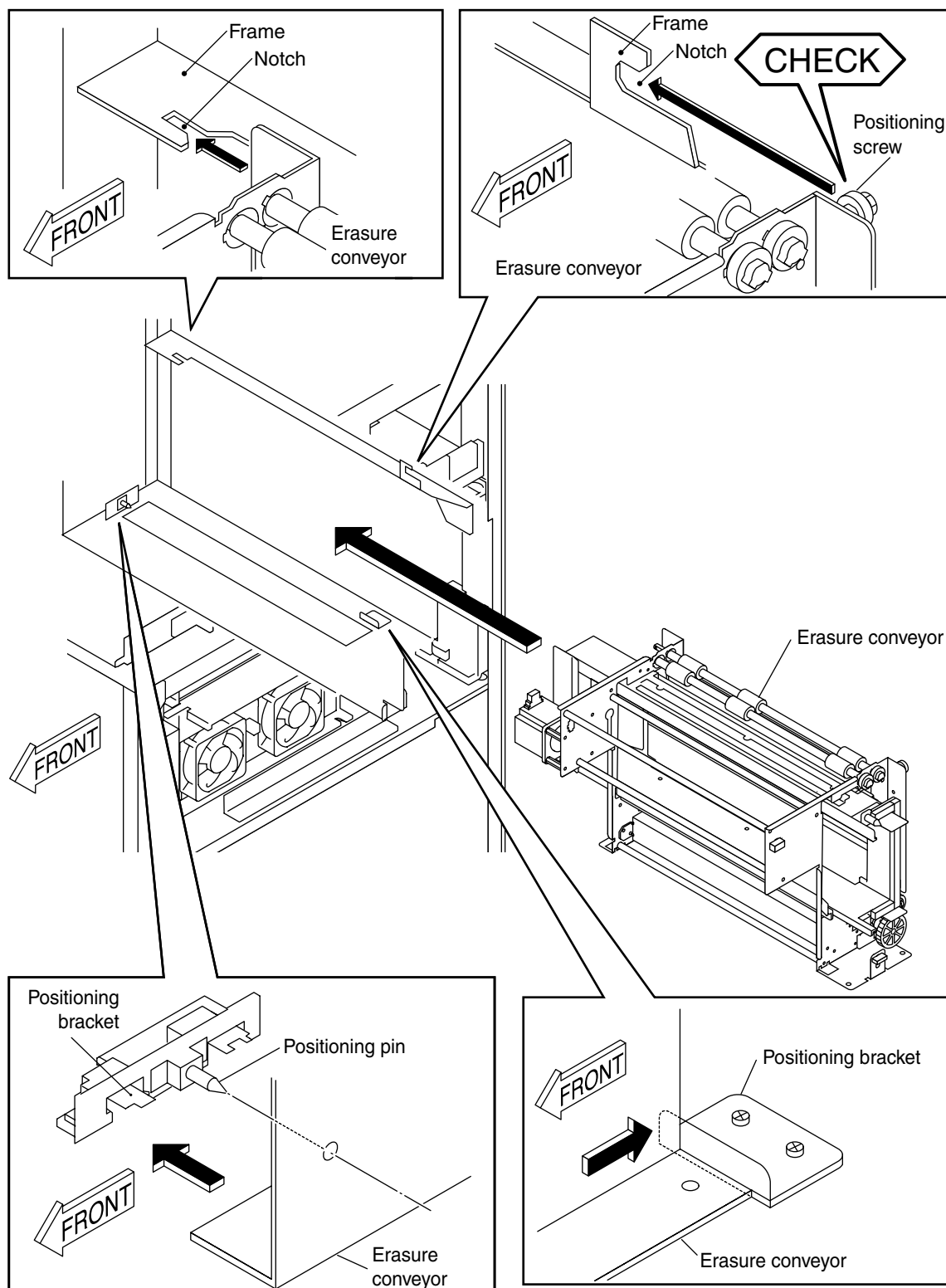
## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

When installing the erasure conveyor, complete the following positioning steps:

- Locate the positioning pin in the rear right-hand side of the machine and then lodge it in the hole in the erasure conveyor side plate.
- Press the erasure conveyor against the positioning bracket in the rear of the machine.
- Insert the side plate and positioning screw of the erasure conveyor into their mating notches of the frame.

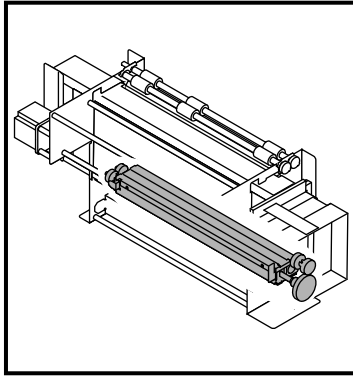


FR7H3539.EPS

**■ Check**

Make sure that the side plate and positioning screw of the erasure conveyor are fitted into their mating notches of the frame.

## 6.3 Cleaning Roller Assembly



FR7H3044.EPS

### ■ Removal procedure

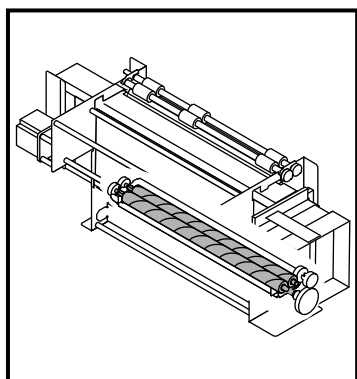
(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Lower left-hand side cover

☞ “3. Removing and Installing the Covers”




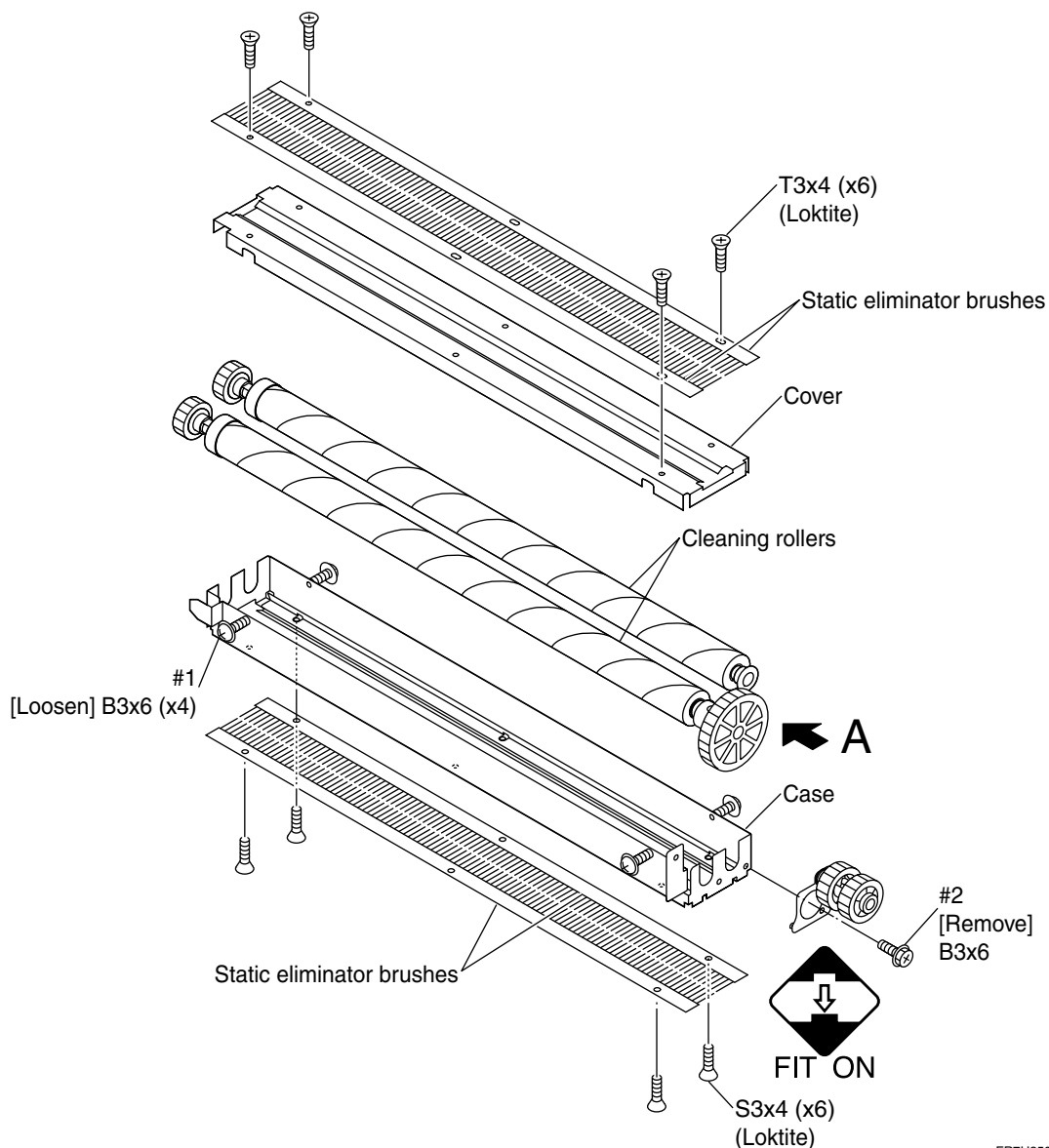
## 6.4 Cleaning Rollers



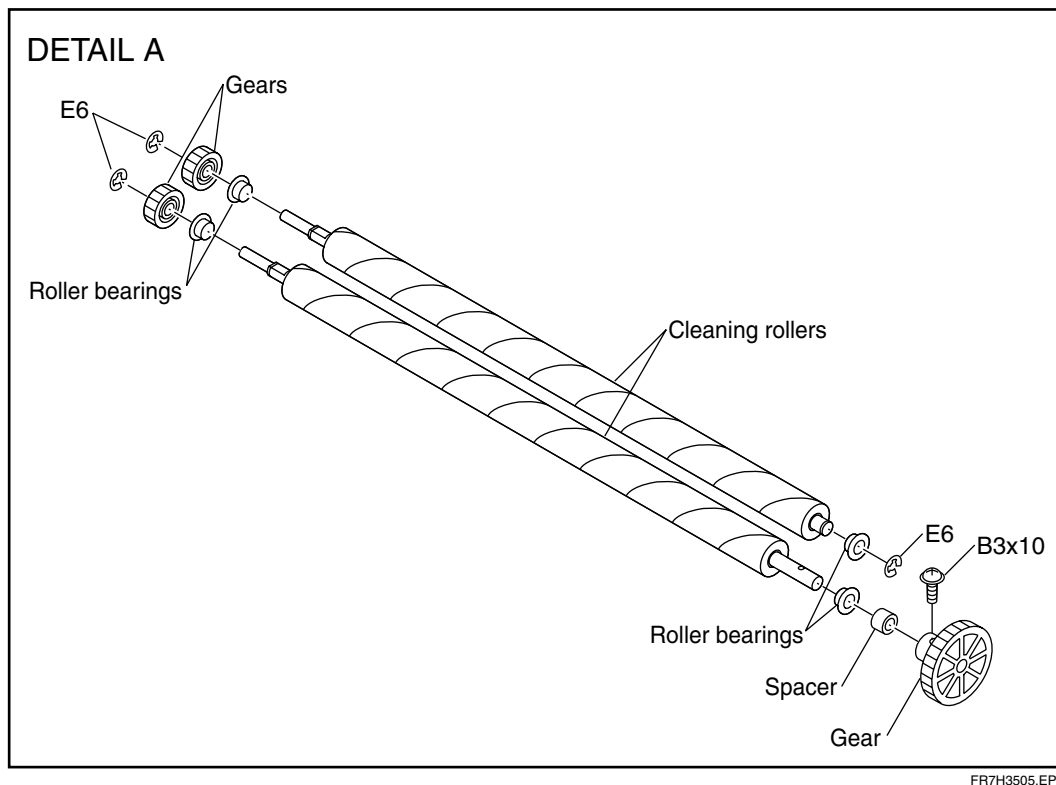
FR7H3045.EPS

### ■ Removal procedure

- (1) Remove the cleaning roller assembly.  
 "6.3 Cleaning Roller Assembly"
- (2) Remove the cleaning rollers.



FR7H3504.EPS

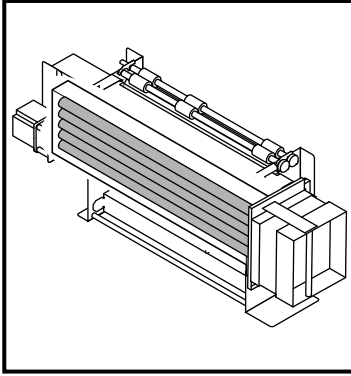


### ■ Installation procedure

To accomplish installation, reverse the removal procedure.



## 6.5 Erasure Lamps (LAMP1-LAMP5)



FR7H3555.EPS

### ■ Removal procedure



#### **CAUTION**

*Since the erasure lamp may be heated to a high temperature, exercise care not to suffer burns.*

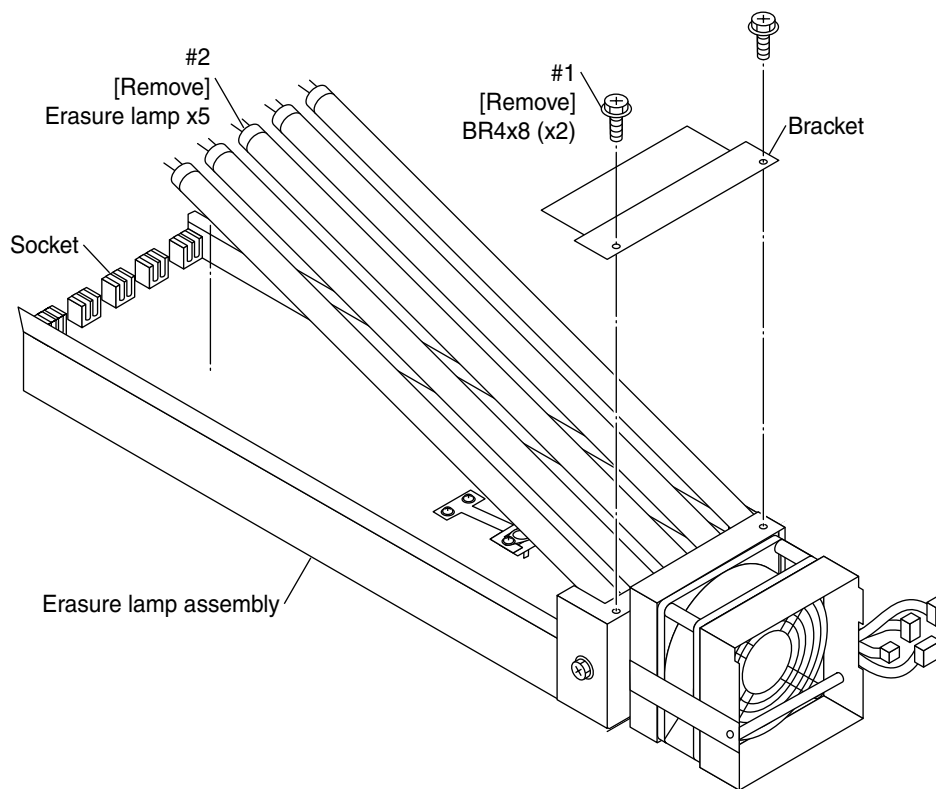
- (1) Remove the erasure lamp assembly.

 "6.1 Erasure Lamp Assembly"

#### ◇ **REFERENCE** ◇

*When removing an erasure lamp, hold its metal end and begin by removing its left end from the mating socket.*

(2) Remove the erasure lamps.

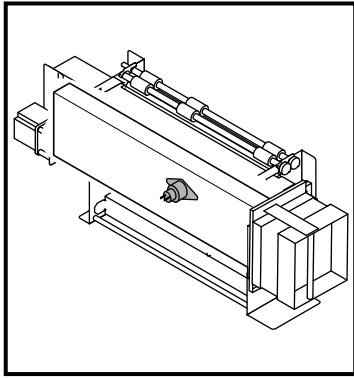


FR7H3510.EPS

### ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 6.6 Erasure Thermostatic Switch (TSW2)



FR7H3556.EPS

### ■ Removal procedure

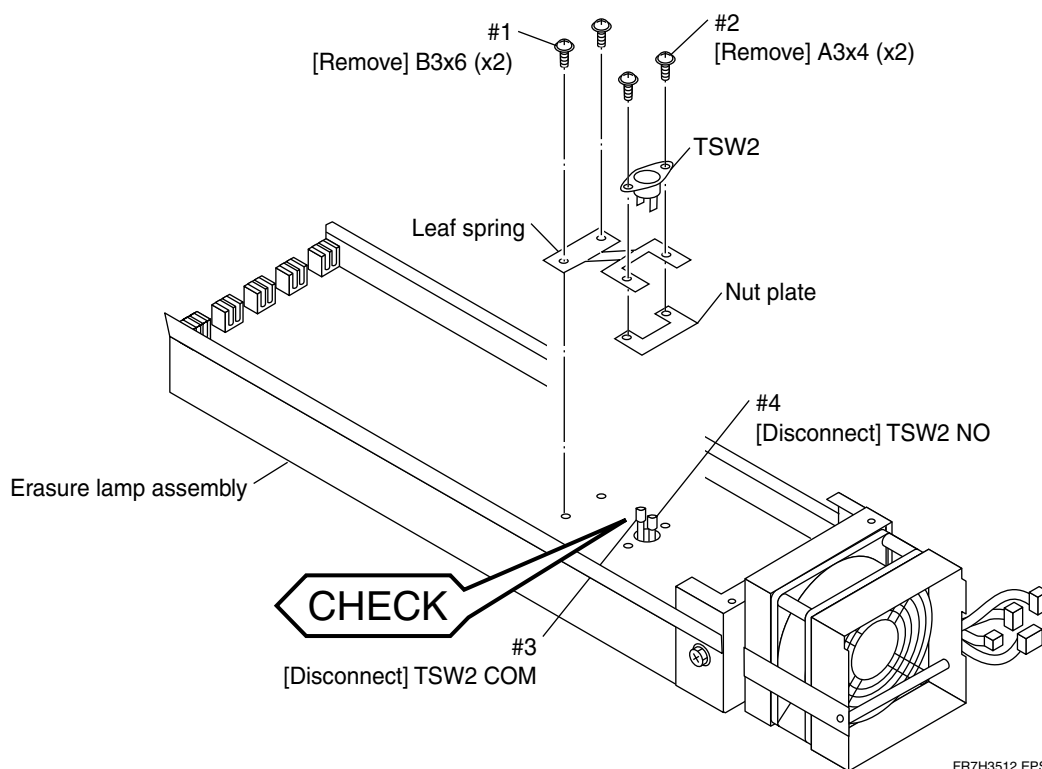
- (1) Remove the erasure lamps.

☞ “6.5 Erasure Lamps (LAMP1-LAMP5)”

#### ◆ INSTRUCTIONS ◆

- *Install the leaf spring to prevent the nut plate from coming into contact with the reflection plate.*
- *Do not deform the leaf spring. If it is deformed, the nut plate may come into contact with the reflection plate.*

(2) Remove the erasure thermostatic switch (TSW2).



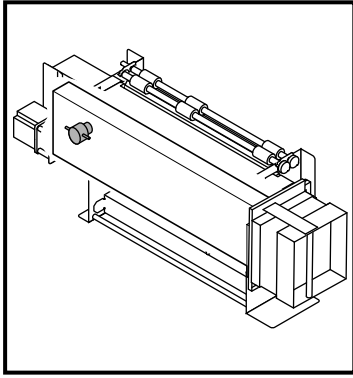
## ■ Installation procedure

### ◆ NOTE ◆

*When connecting the FASTON terminals (TSW2 COM and TSW2 NO), insert them all the way into their positions.*

To accomplish installation, reverse the removal procedure.

## 6.7 Erasure Thermostatic Switch (TSW1)



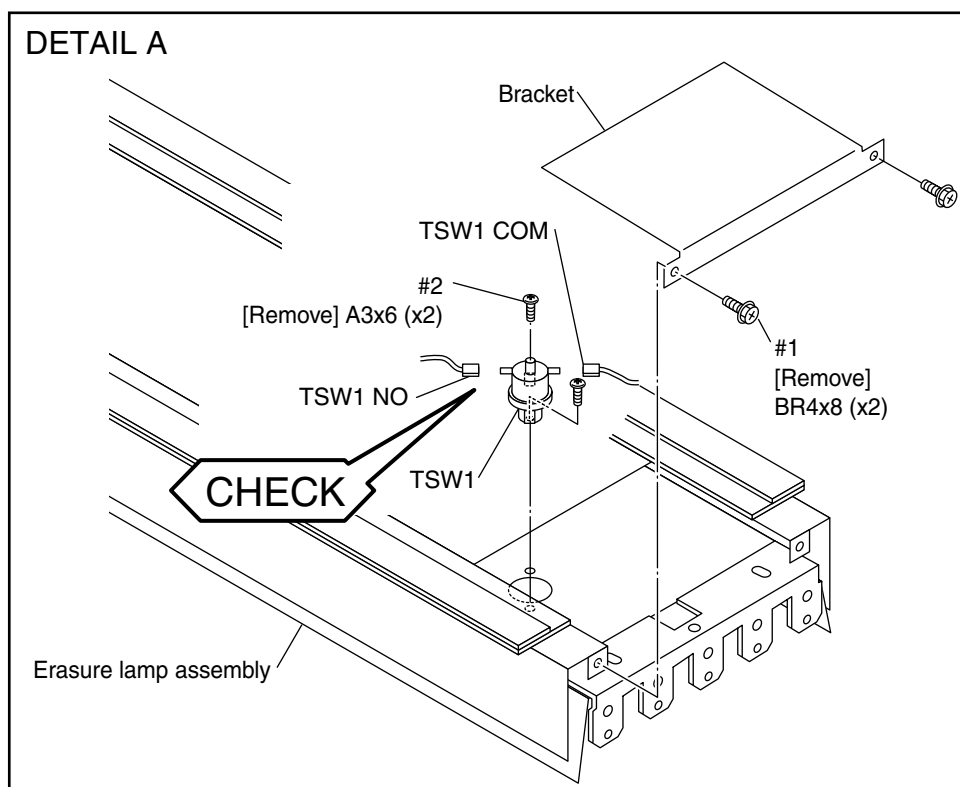
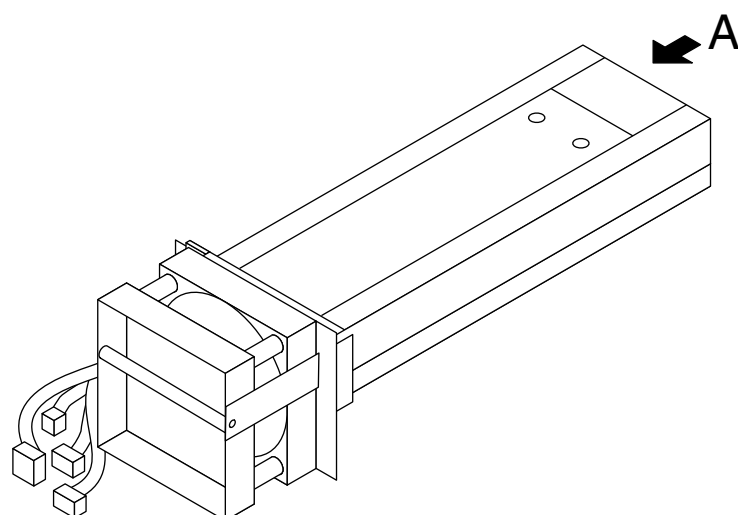
FR7H3557.EPS

### ■ Removal procedure

- (1) Remove the erasure lamp assembly.

☞ “6.1 Erasure Lamp Assembly”

(2) Remove the erasure thermostatic switch (TSW1).



FR7H3515.EPS

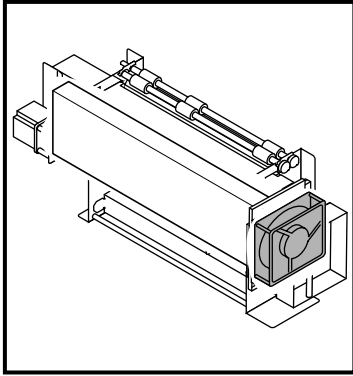
## ■ Installation procedure

### ◆ NOTE ◆

*When connecting the FASTON terminals (TSW1 COM and TSW1 NO), insert them all the way into their positions.*

To accomplish installation, reverse the removal procedure.

## 6.8 Erasure Cooling Fan (FANM1)



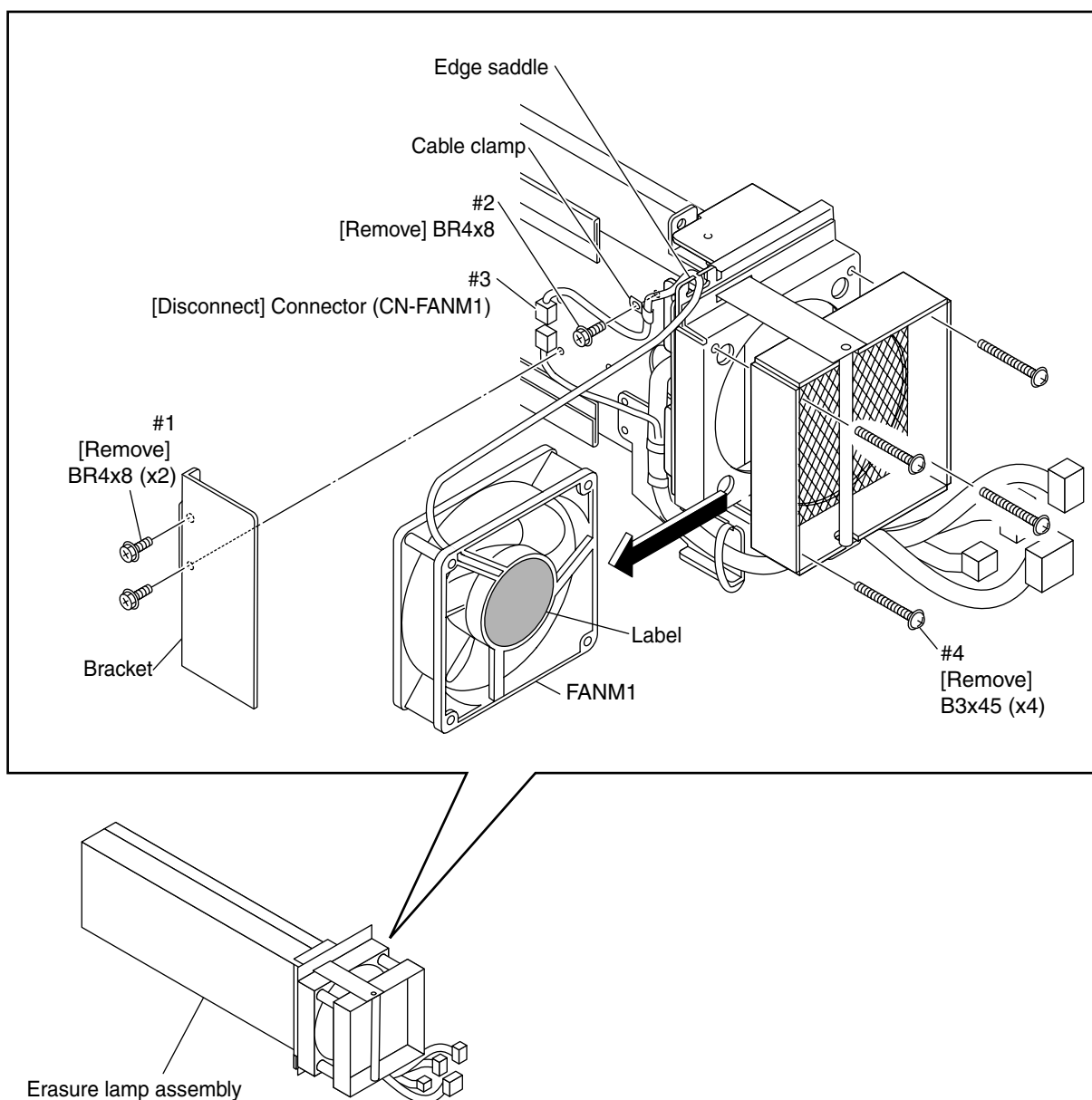
FR7H3558.EPS

### ■ Removal procedure

- (1) Remove the erasure lamp assembly.

☞ “6.1 Erasure Lamp Assembly”

- (2) Remove the erasure cooling fan (FANM1).



FR7H3518.EPS

## ■ Installation procedure

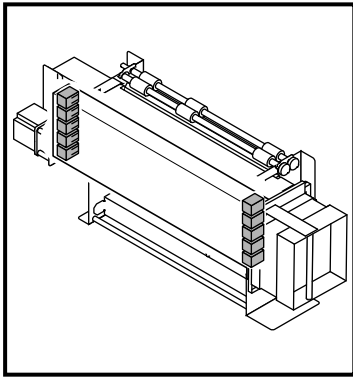
### ◆ INSTRUCTION ◆

*When installing the fan, orient its label as illustrated above.*

To accomplish installation, reverse the removal procedure.



## 6.9 Sockets



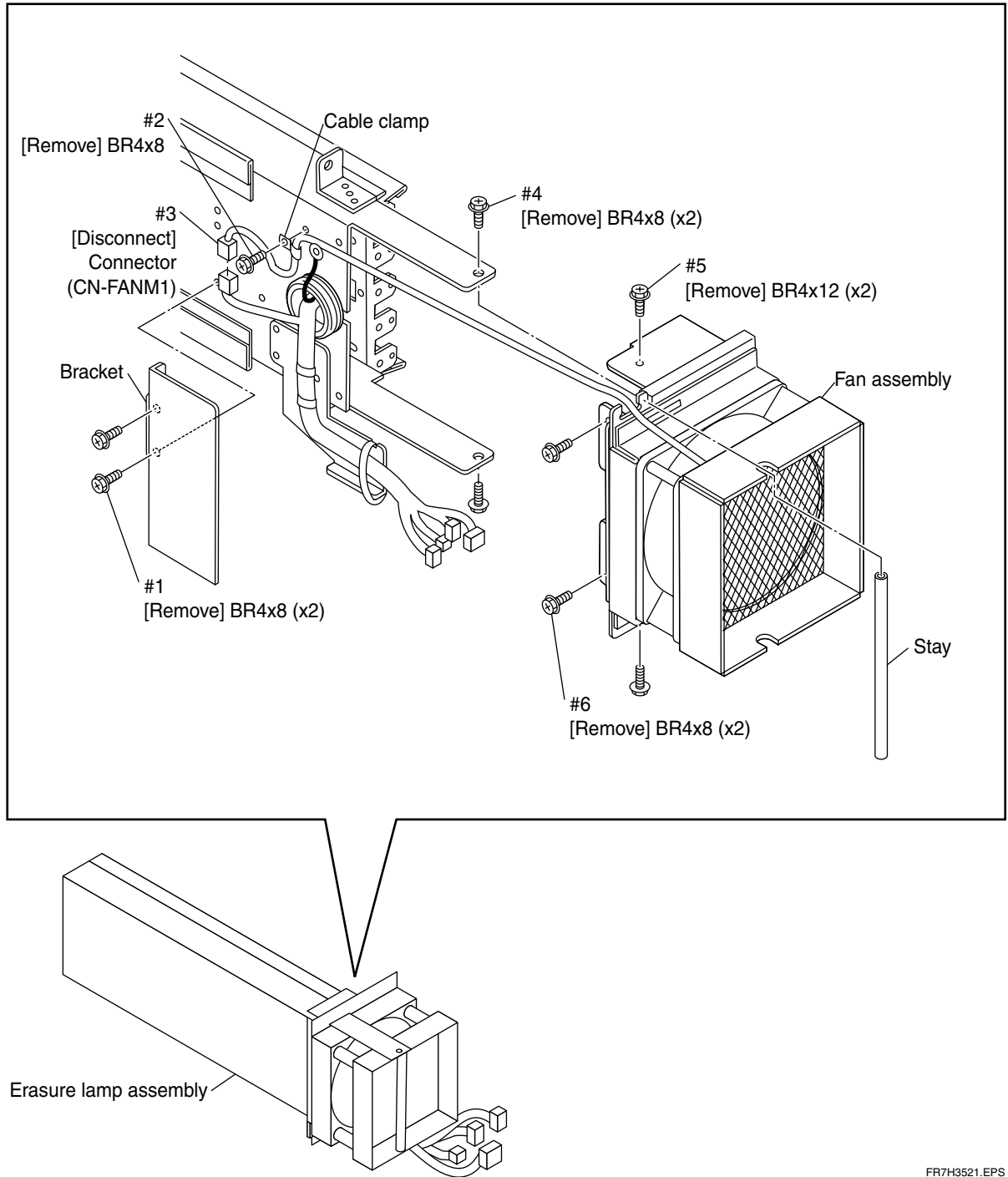
FR7H3559.EPS

### ■ Removal procedure

- (1) Remove the erasure lamps.

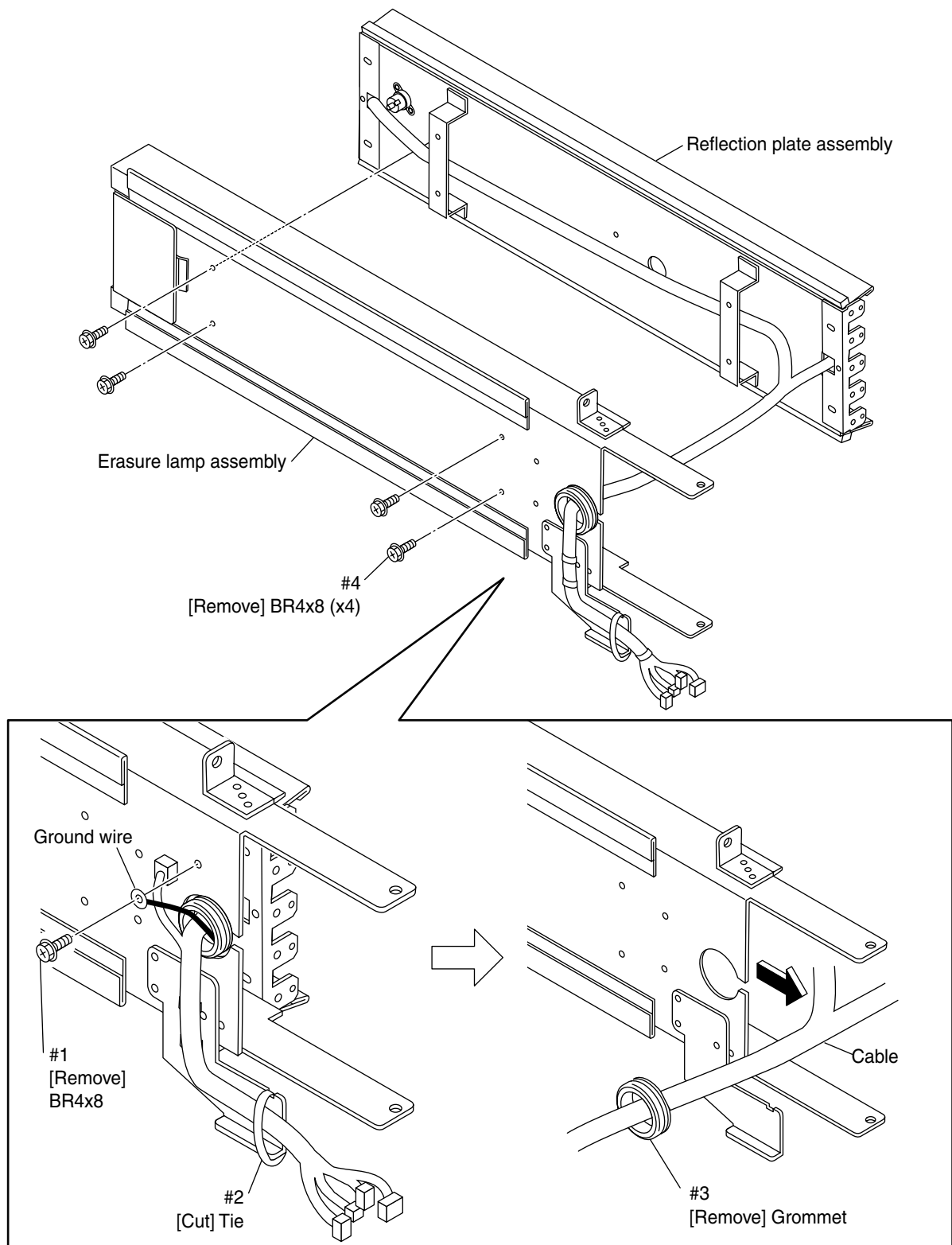
☞ “6.5 Erasure Lamps (LAMP1-LAMP5)”

(2) Remove the fan assembly.



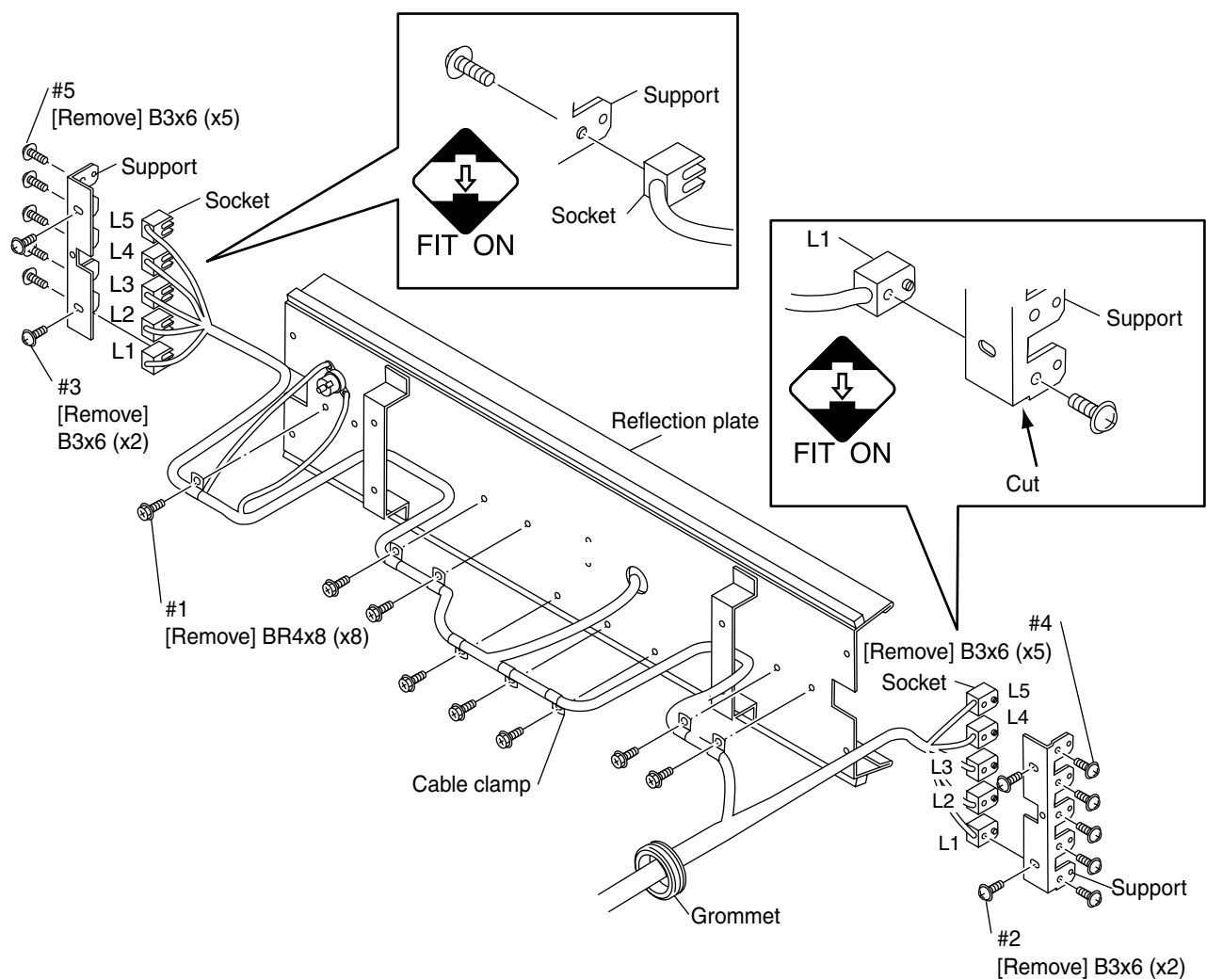
FR7H3521.EPS

(3) Remove the reflection plate assembly.



FR7H3522.EPS

(4) Remove the sockets.



FR7H3523.EPS

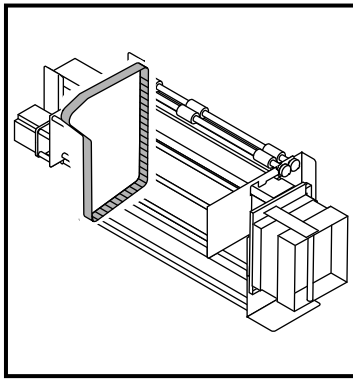
## ■ Installation procedure

### ◆ NOTE ◆

When installing the sockets, note their socket numbers (L1 to L5) to ensure correct installation.

To accomplish installation, reverse the removal procedure.

## 6.10 Timing Belts



FR7H3560.EPS

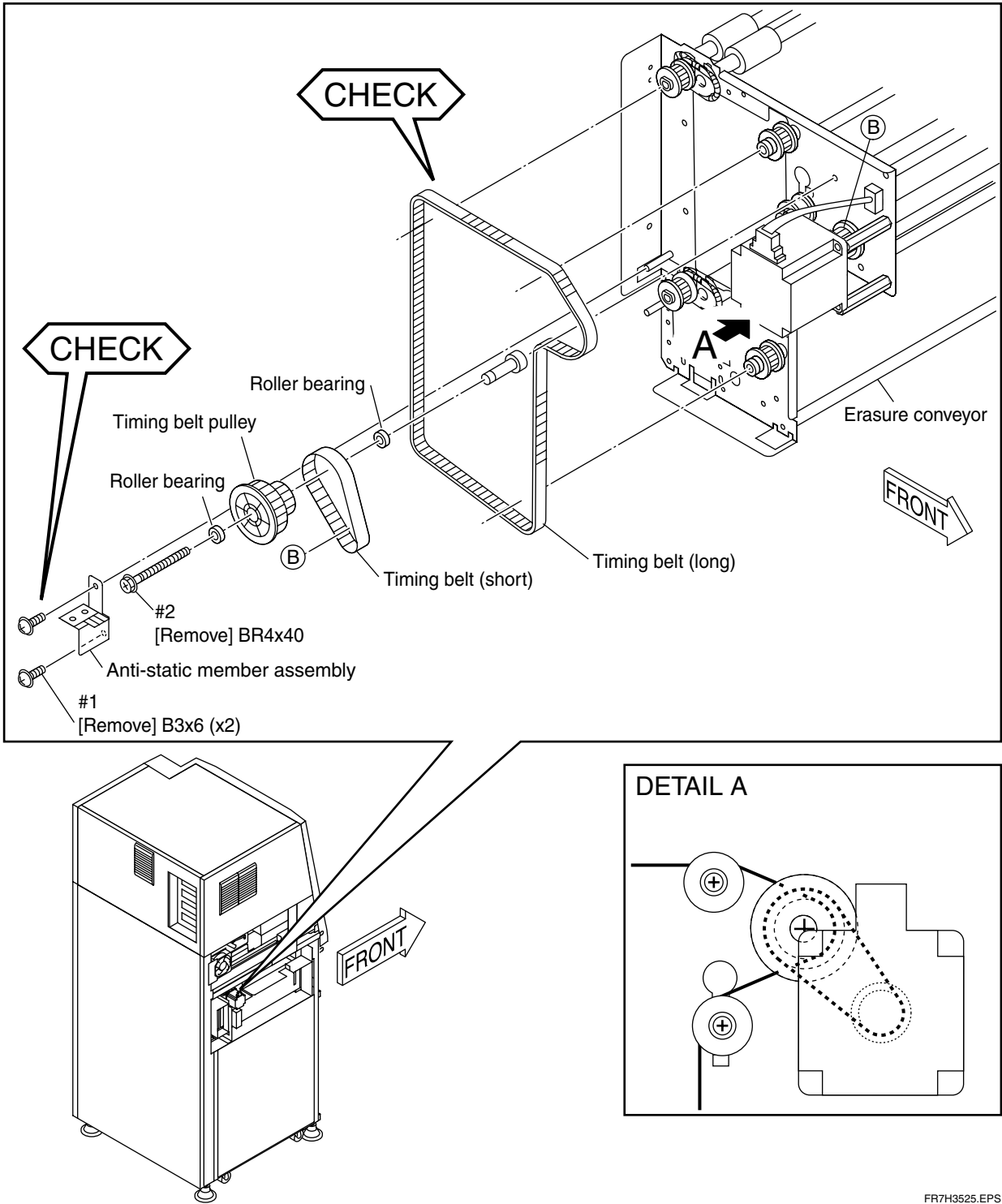
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower left-hand side cover

☞ “3. Removing and Installing the Covers”

(2) Remove the timing belts.



FR7H3525.EPS

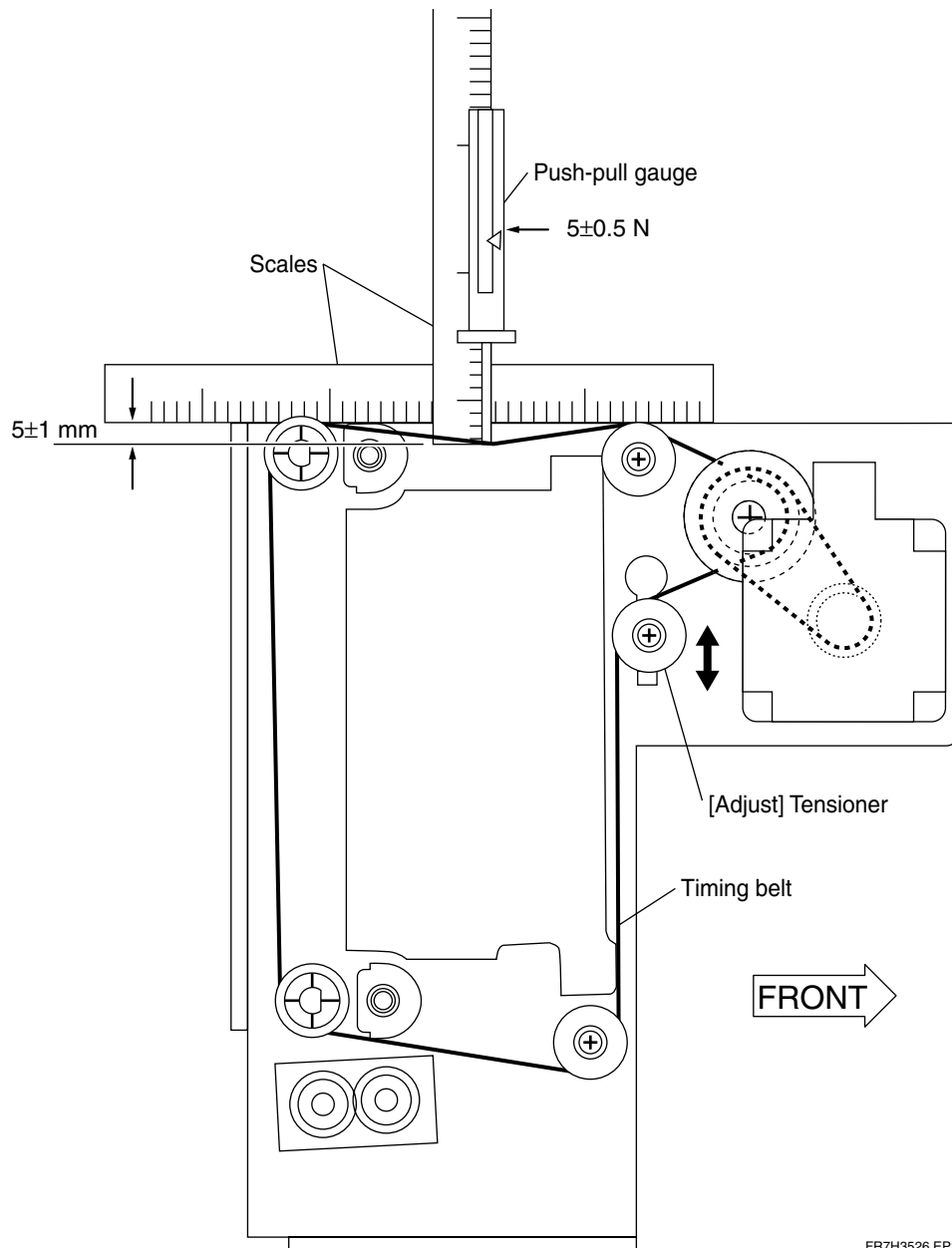
## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## ■ Check/adjustment procedure

- Make sure that the anti-static member is brought into contact with the roller.
- Check that the long timing belt is properly threaded through its path.
- After the long timing belt is replaced with a new one or the tensioner is removed and reinstalled, remove the erasure conveyor and adjust the belt tension with the tensioner screw.

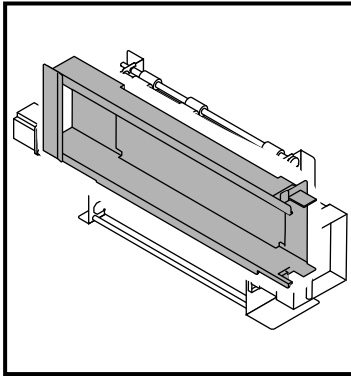
☞ “6.2 Erasure Conveyor”



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## 6.11 Lamp House Assembly



FR7H3561.EPS

### ■ Removal procedure

(1) Remove the following covers:

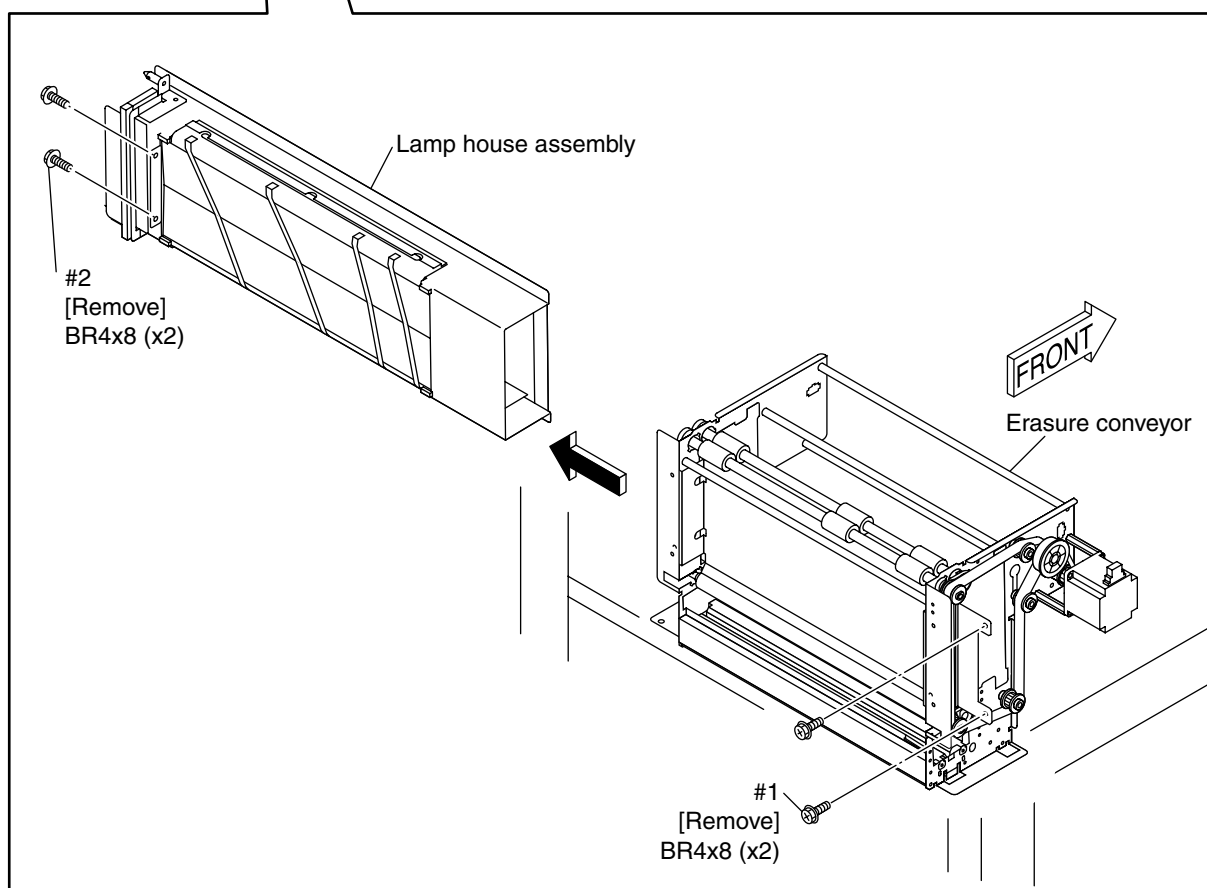
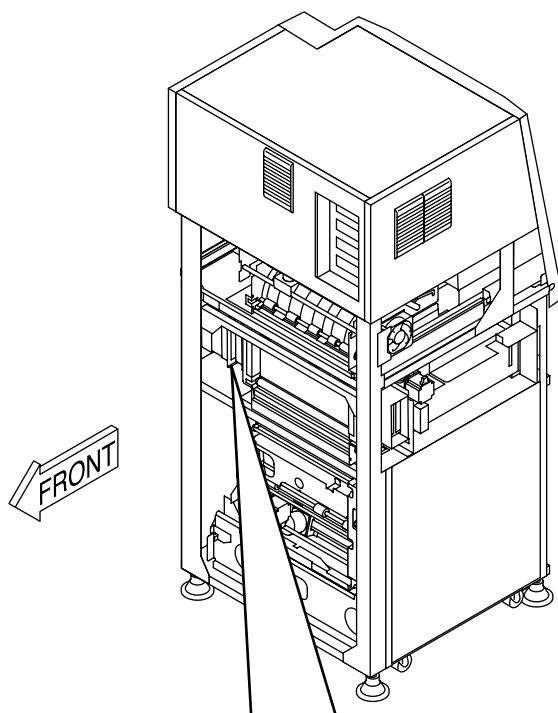
- Lower front cover
- Lower right-hand side cover
- Lower left-hand side cover
- Lower rear cover

☞ “3. Removing and Installing the Covers”

(2) Remove the erasure lamp assembly.

☞ “6.1 Erasure Lamp Assembly”

(3) Remove the lamp house assembly.

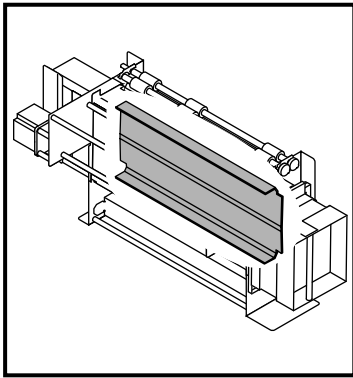


FR7H3528.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

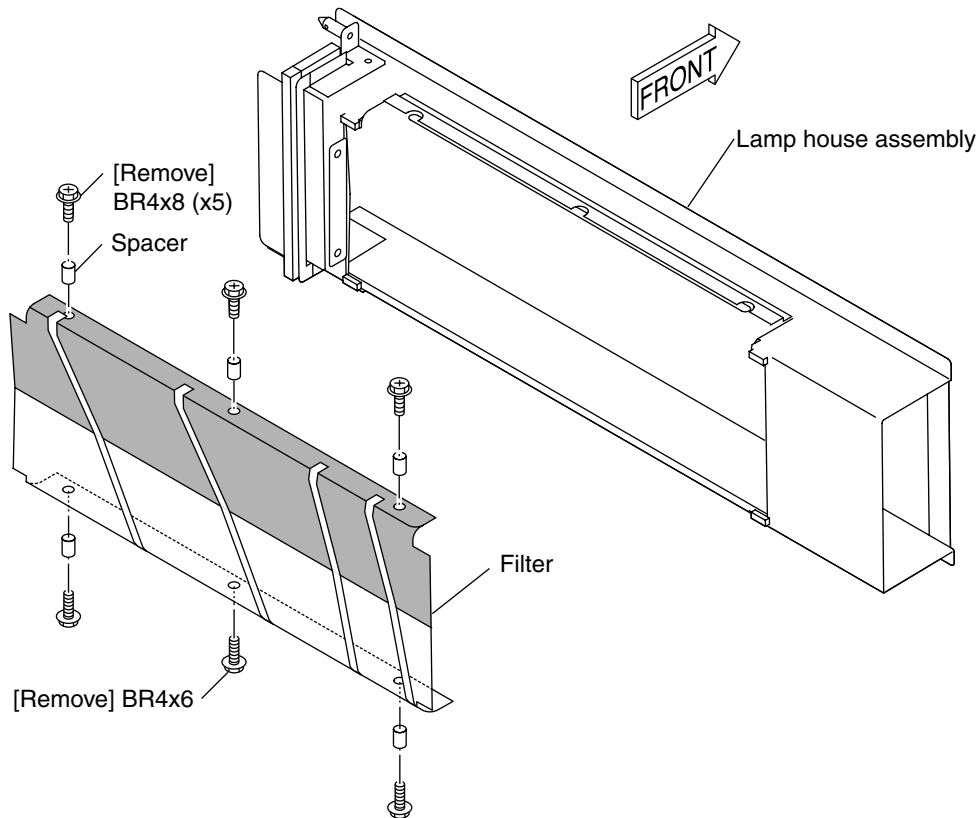
## 6.12 Filter



FR7H3562.EPS

### ■ Removal procedure

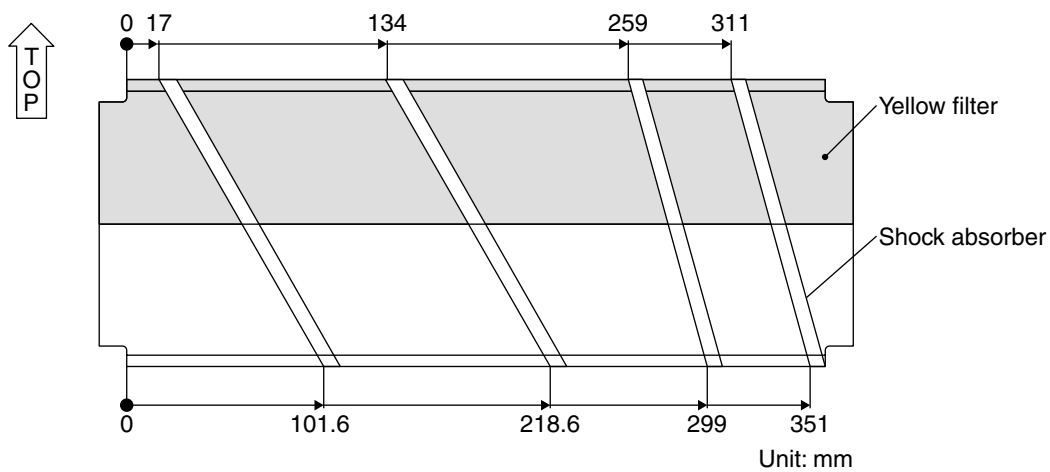
- (1) Remove the lamp house assembly.  
☞ “6.11 Lamp House Assembly”
- (2) Remove the filter.



FR7H3531.EPS

### ◇ REFERENCE ◇

When replacing the shock absorbers, comply with the following dimensional requirements:

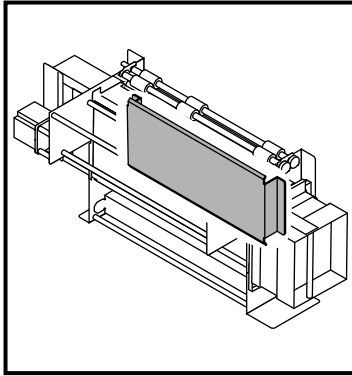


FR7H3532.EPS

### ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 6.13 Reflection Plate



FR7H3563.EPS

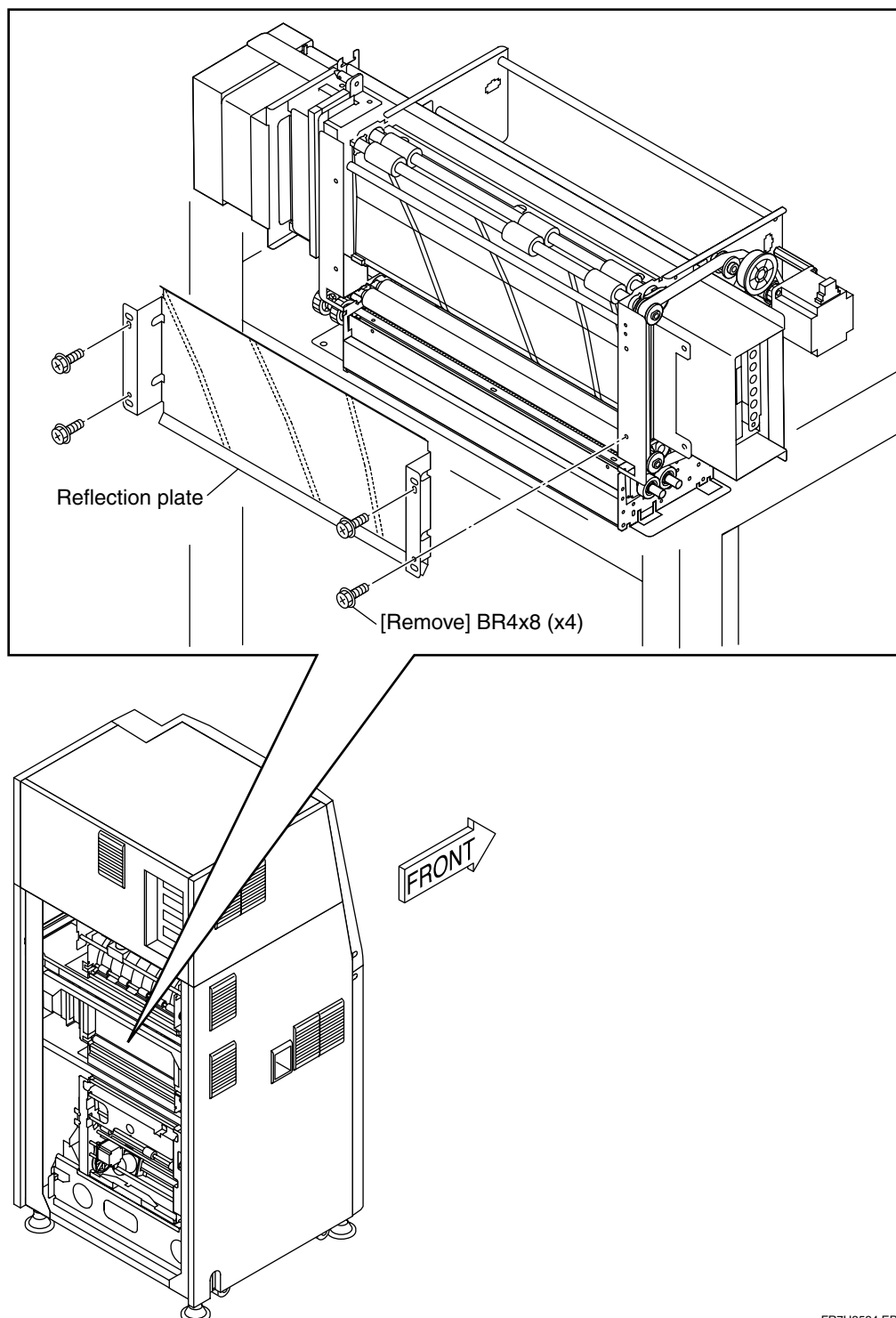
### ■ Removal procedure

(1) Remove the following cover:

- Lower rear cover

👉 “3. Removing and Installing the Covers”

(2) Remove the reflection plate.

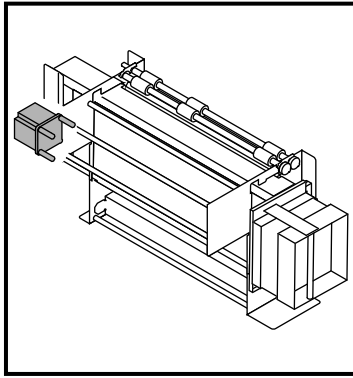


FR7H3534.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

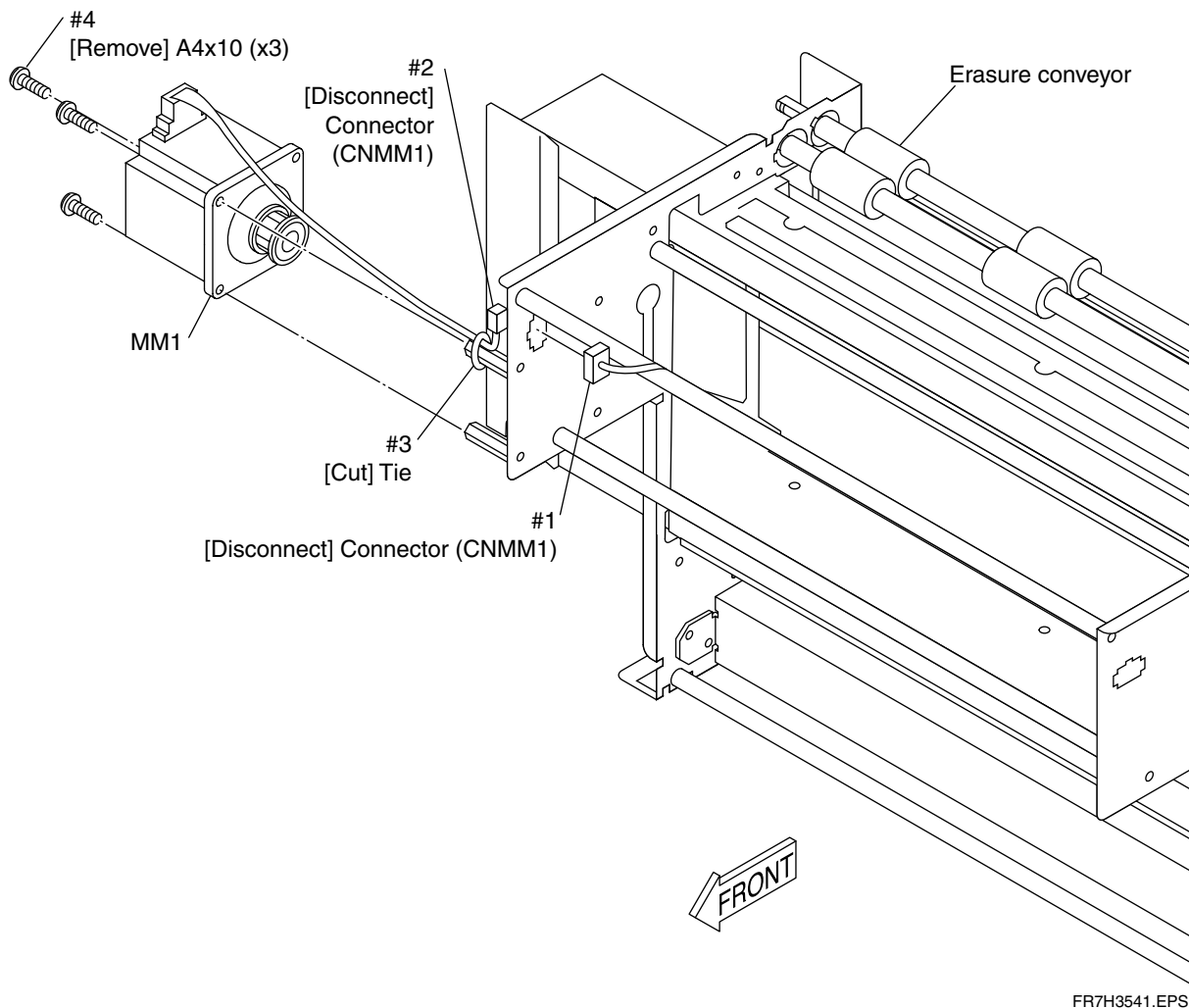
## 6.14 IP Transport Motor (MM1)



FR7H3564.EPS

### ■ Removal procedure

- (1) Remove the erasure conveyor.
  - ☞ “6.2 Erasure Conveyor”
- (2) Remove the IP transport motor (MM1).



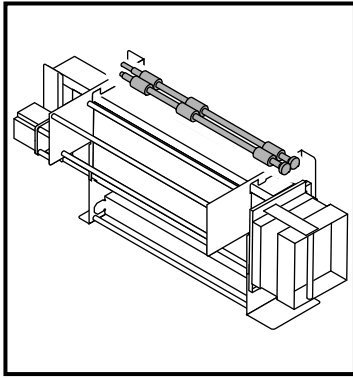
FR7H3541.EPS

**■ Installation procedure**

To accomplish installation, reverse the removal procedure.



## 6.15 Rubber Rollers (Upper)

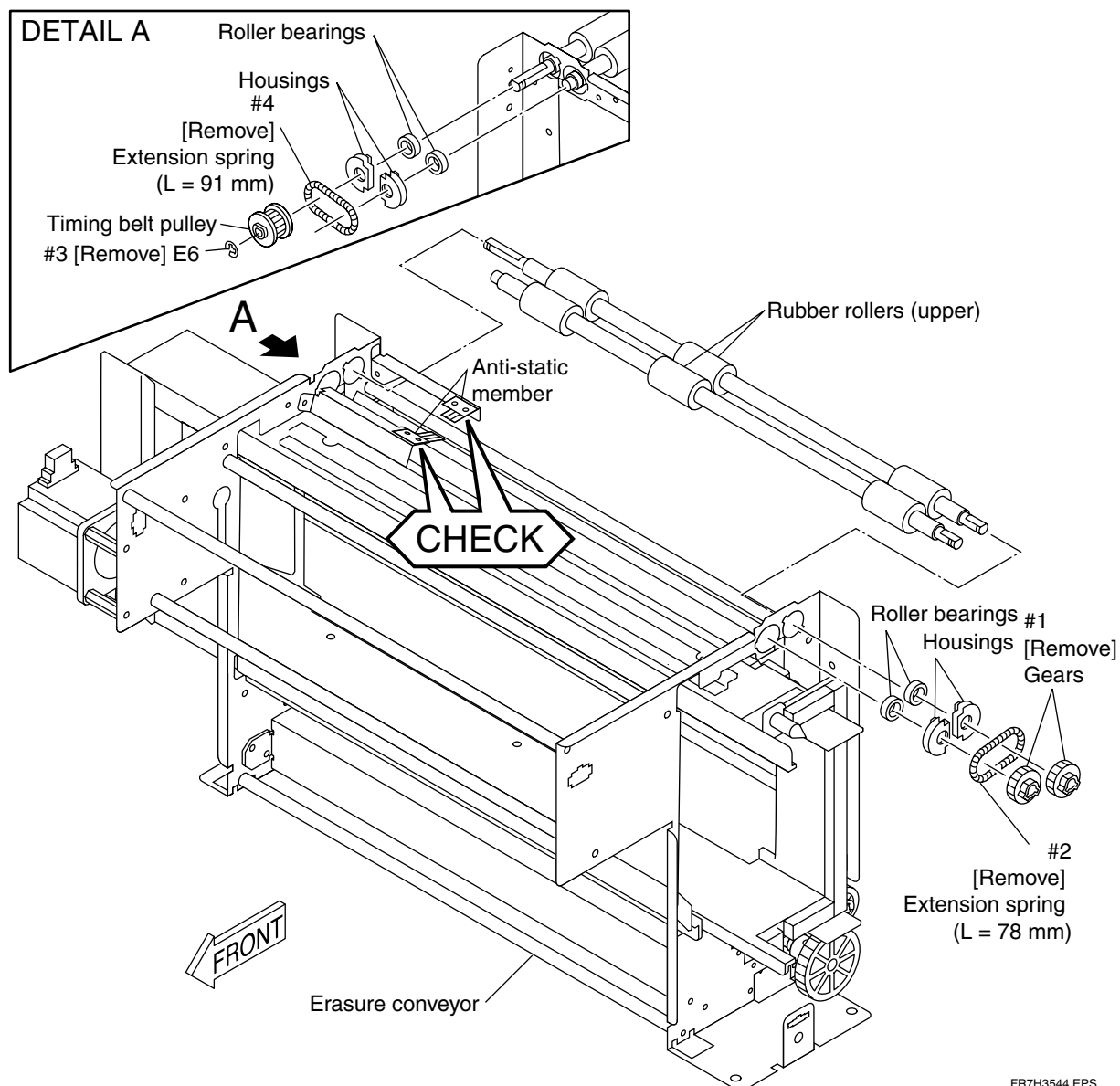


FR7H3565.EPS

### ■ Removal procedure

- (1) Remove the erasure conveyor.  
☞ “6.2 Erasure Conveyor”
- (2) Remove the timing belt.  
☞ “6.10 Timing Belts”

(3) Remove the rubber rollers (upper).



FR7H3544.EPS

## ■ Installation procedure

### ◆ INSTRUCTION ◆

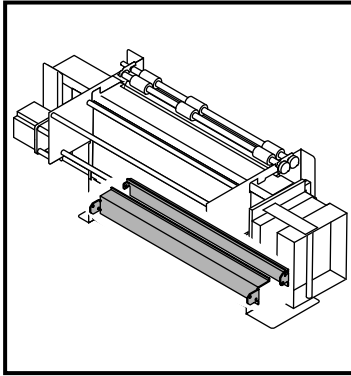
*The extension spring size varies with the mounting location. Pay due attention to the extension spring mounting locations.*

To accomplish installation, reverse the removal procedure.

## ■ Check


Make sure that the anti-static member is brought into contact with the roller.

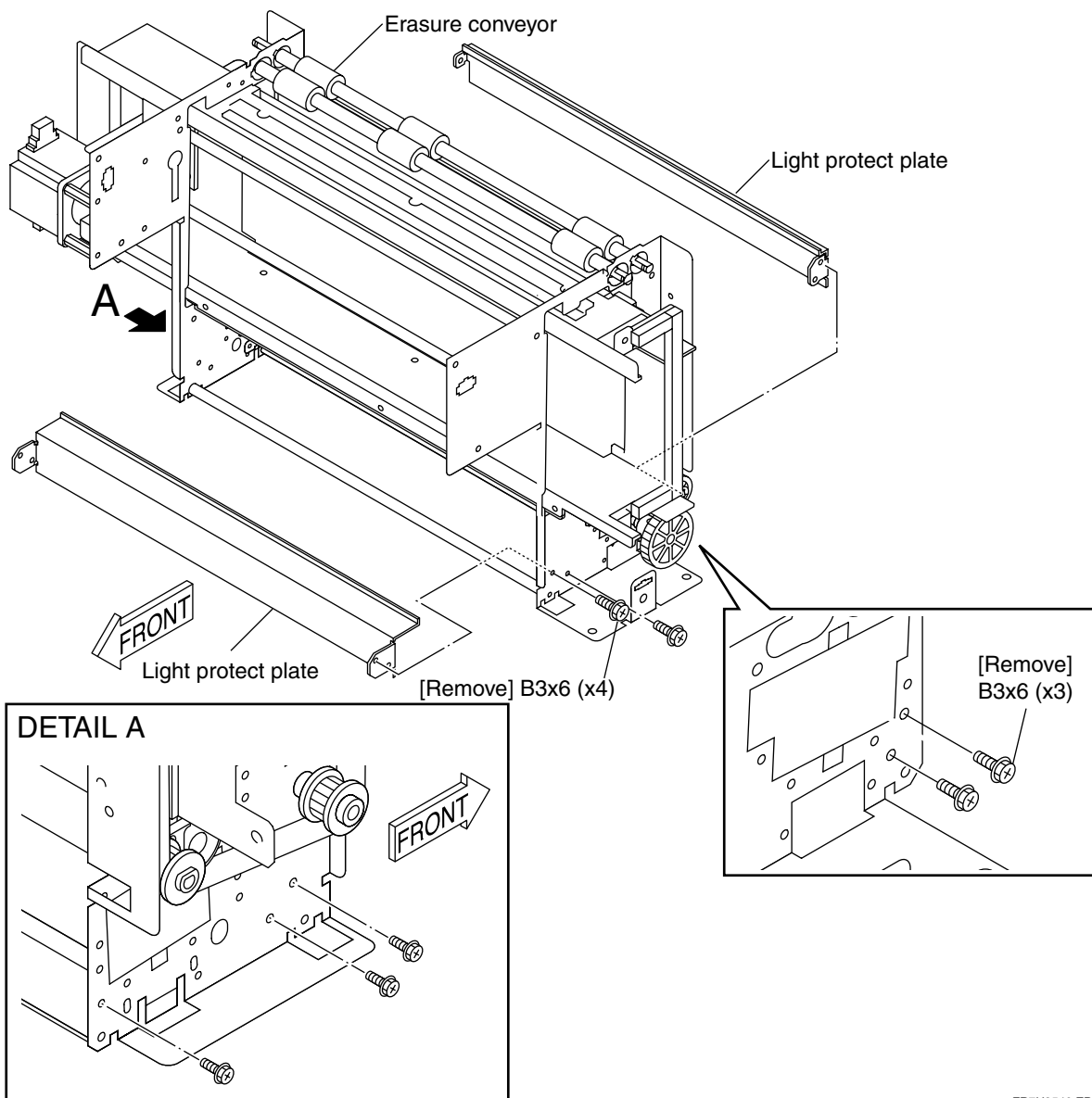
## 6.16 Light Protect Plates



FR7H3566.EPS

### ■ Removal procedure

- (1) Remove the erasure conveyor.  
 "6.2 Erasure Conveyor"
- (2) Remove the light protect plates.



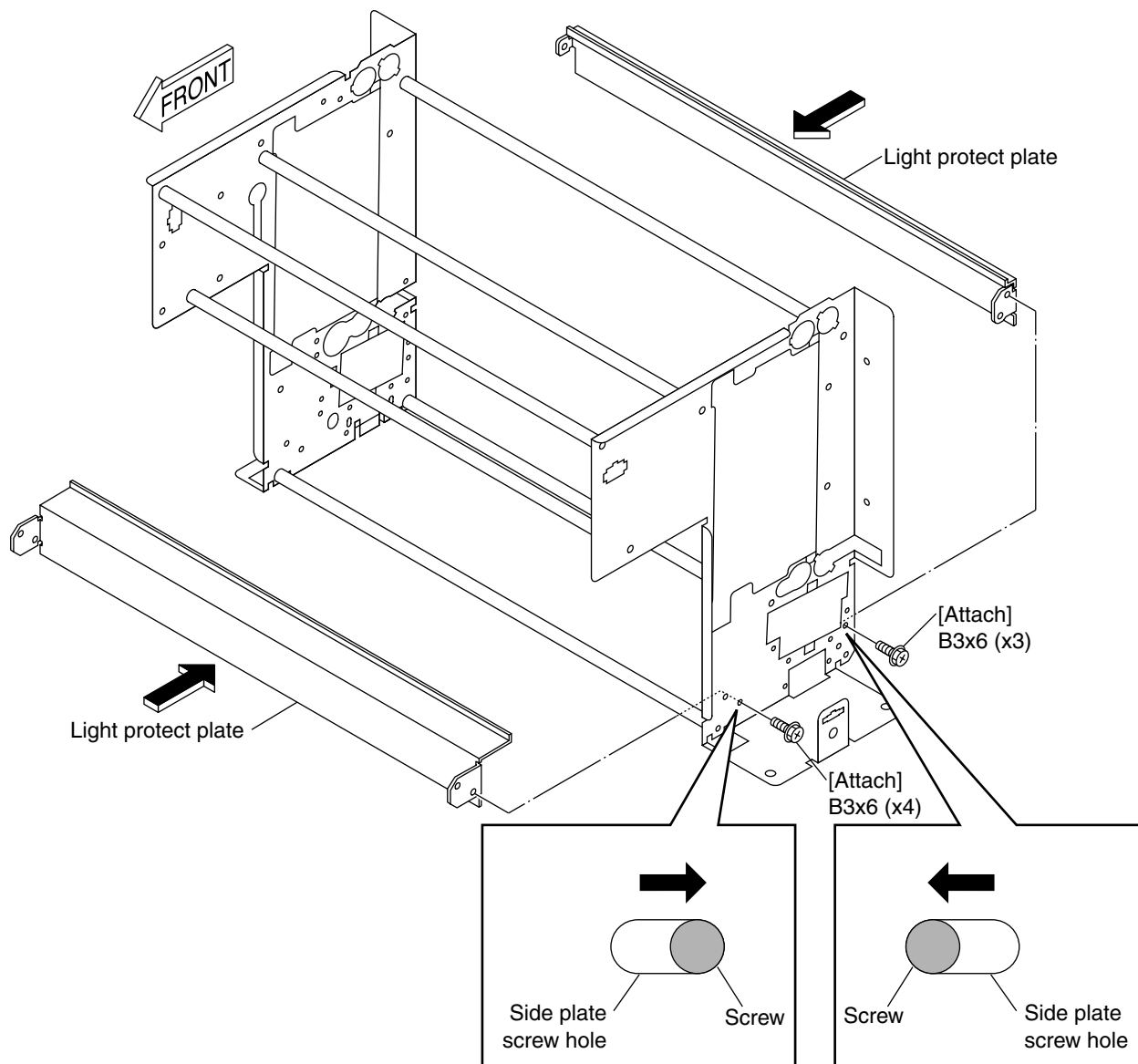
FR7H3546.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

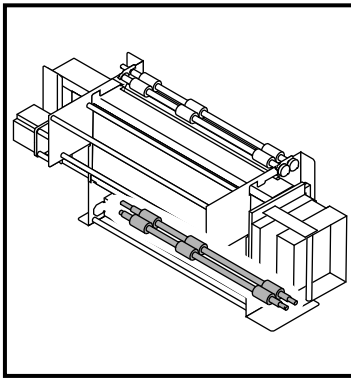
### ◆ INSTRUCTION ◆

*When installing the light protect plates, shift them in the directions of the arrows shown below and then secure.*

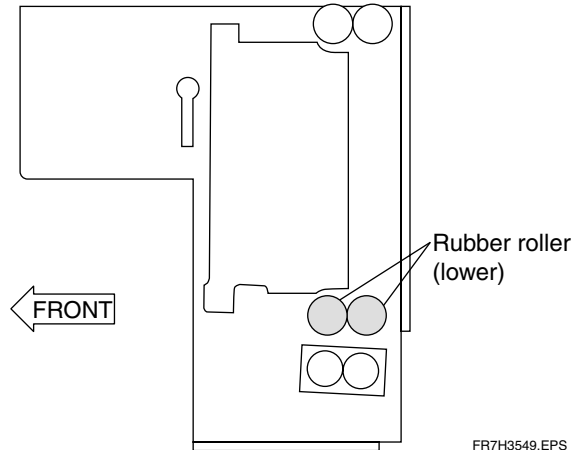


FR7H3547.EPS

## 6.17 Rubber Rollers (Lower)



FR7H3567.EPS

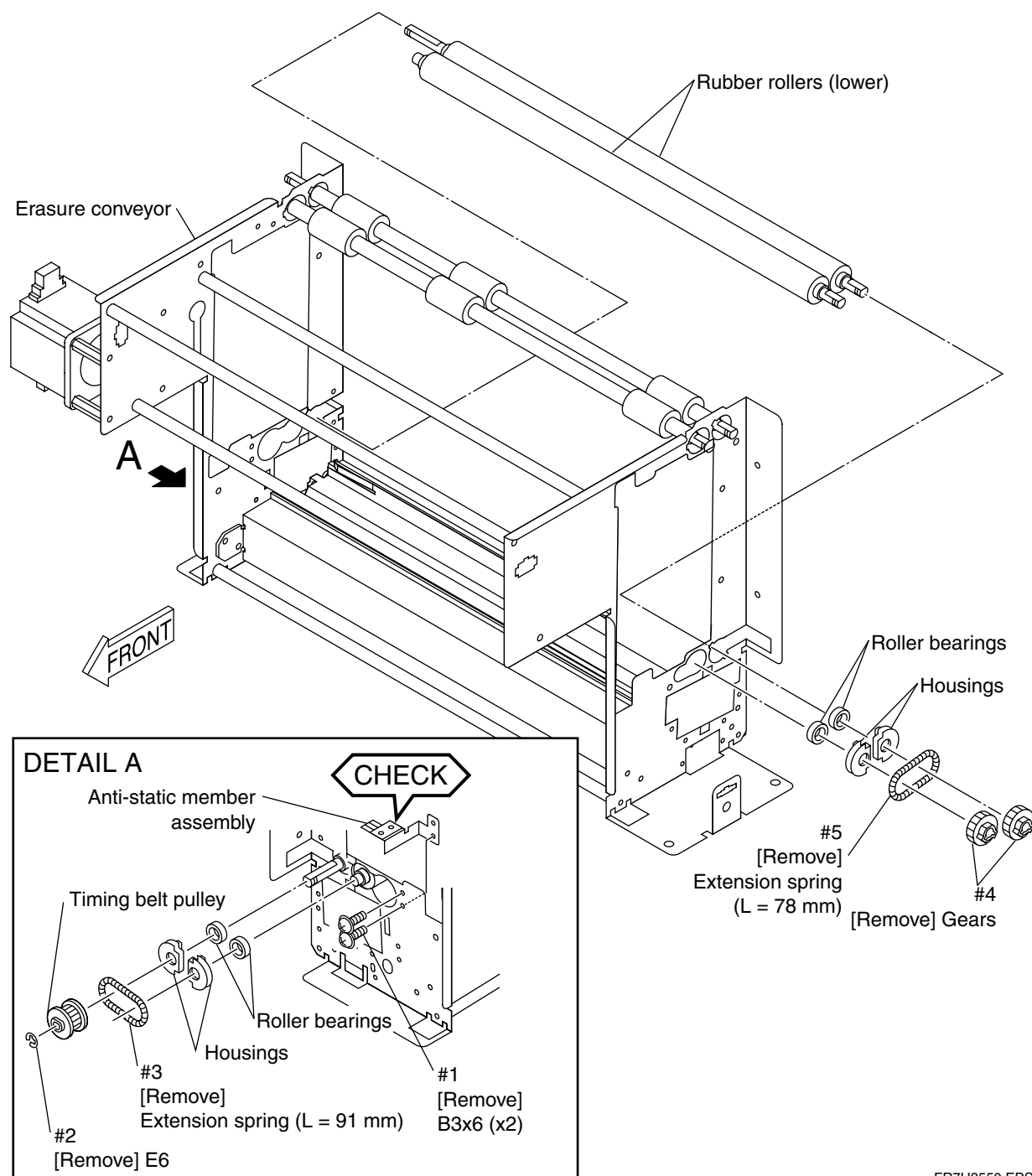


FR7H3549.EPS

### ■ Removal procedure

- (1) Remove the erasure conveyor.  
 "6.2 Erasure Conveyor"
- (2) Remove the cleaning roller assembly.  
 "6.3 Cleaning Roller Assembly"
- (3) Remove the timing belts.  
 "6.10 Timing Belts"
- (4) Remove the reflection plate.  
 "6.13 Reflection Plate"
- (5) Remove the lamp house assembly.  
 "6.11 Lamp House Assembly"

(6) Remove the rubber rollers (lower).



FR7H3550.EPS

## ■ Installation procedure

### ◆ INSTRUCTION ◆

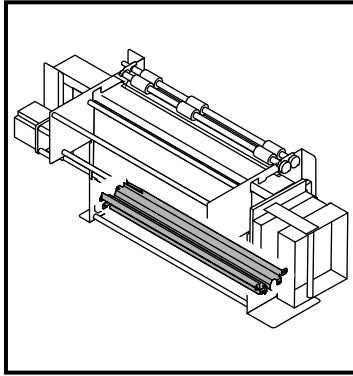
*The extension spring size varies with the mounting location. Pay due attention to the extension spring mounting locations.*

To accomplish installation, reverse the removal procedure.

## ■ Check

Make sure that the anti-static member is brought into contact with the roller.

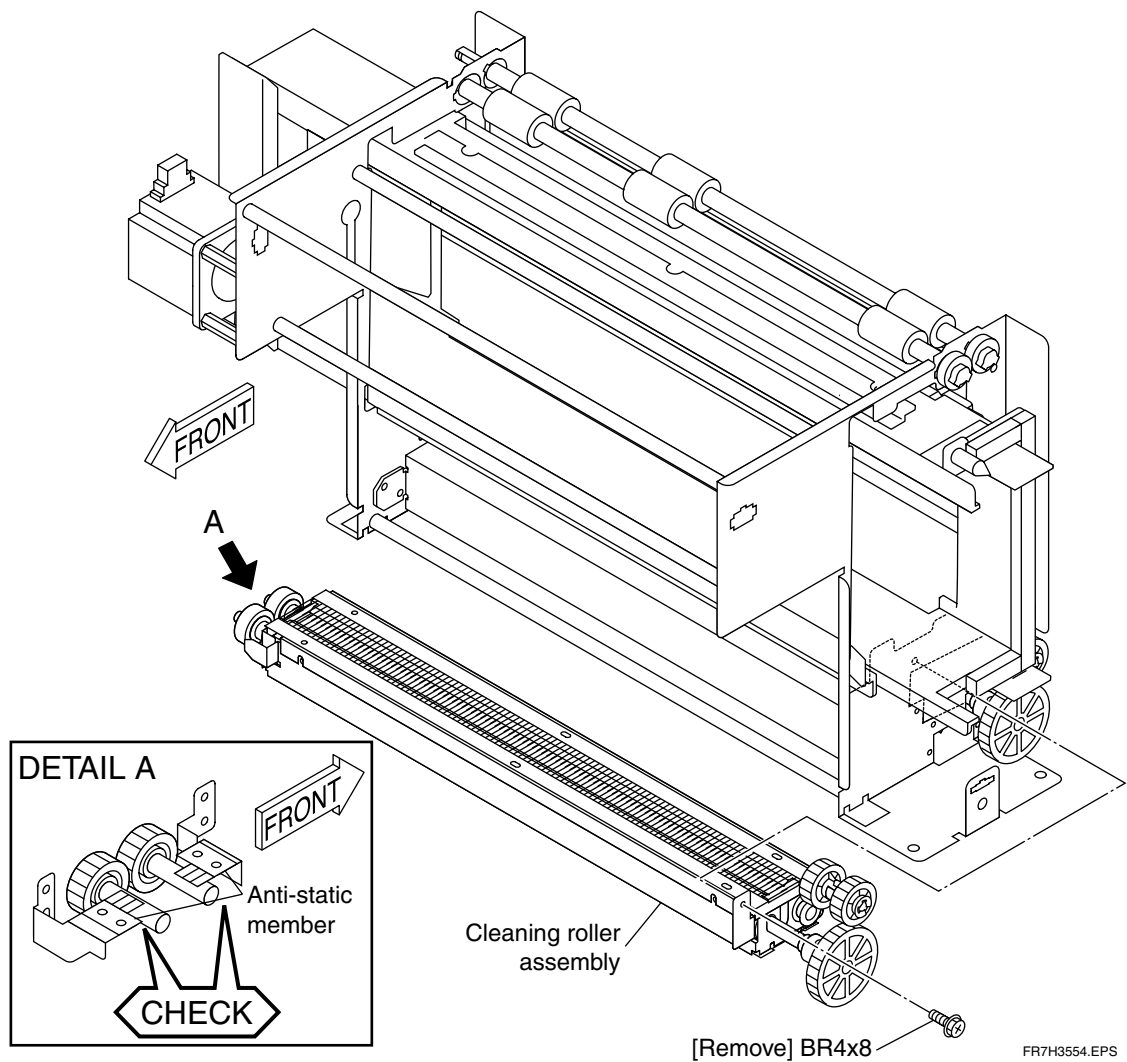
## 6.18 Guide Plates



FR7H3568.EPS

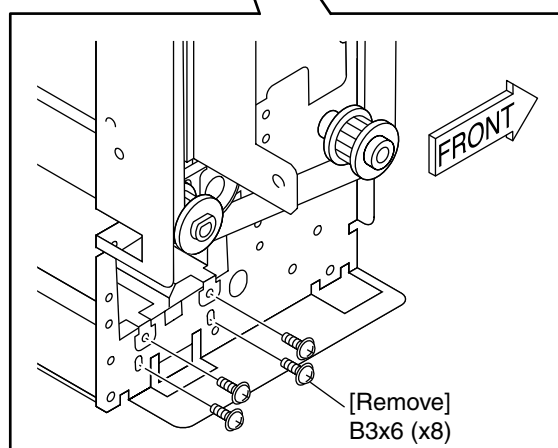
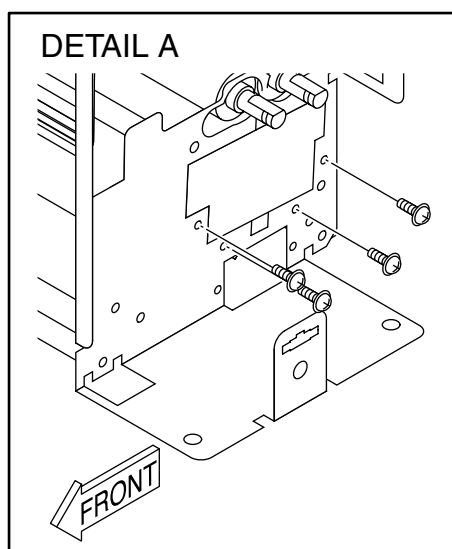
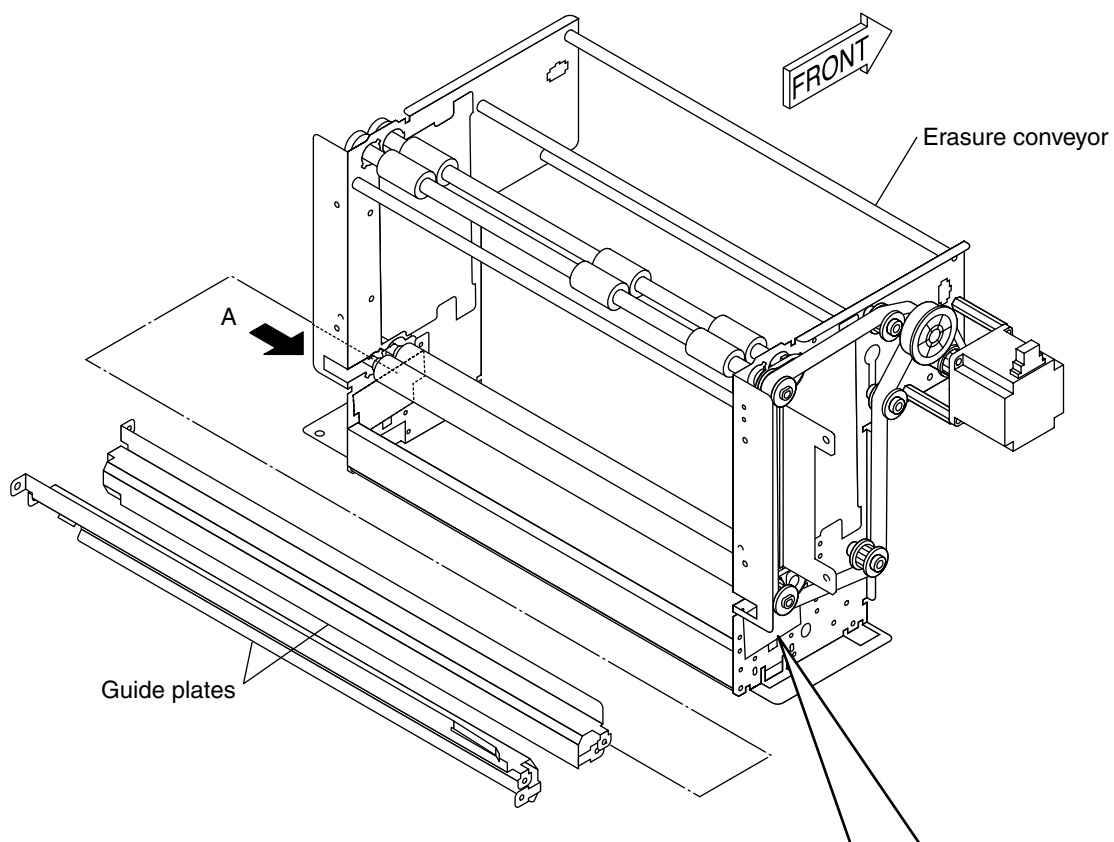
### ■ Removal procedure

- (1) Remove the erasure conveyor.
  - ☞ “6.2 Erasure Conveyor”
- (2) Remove the cleaning roller assembly.



FR7H3554.EPS

- (3) Remove the guide plates to which shock absorbers are attached.



FR7H3552.EPS

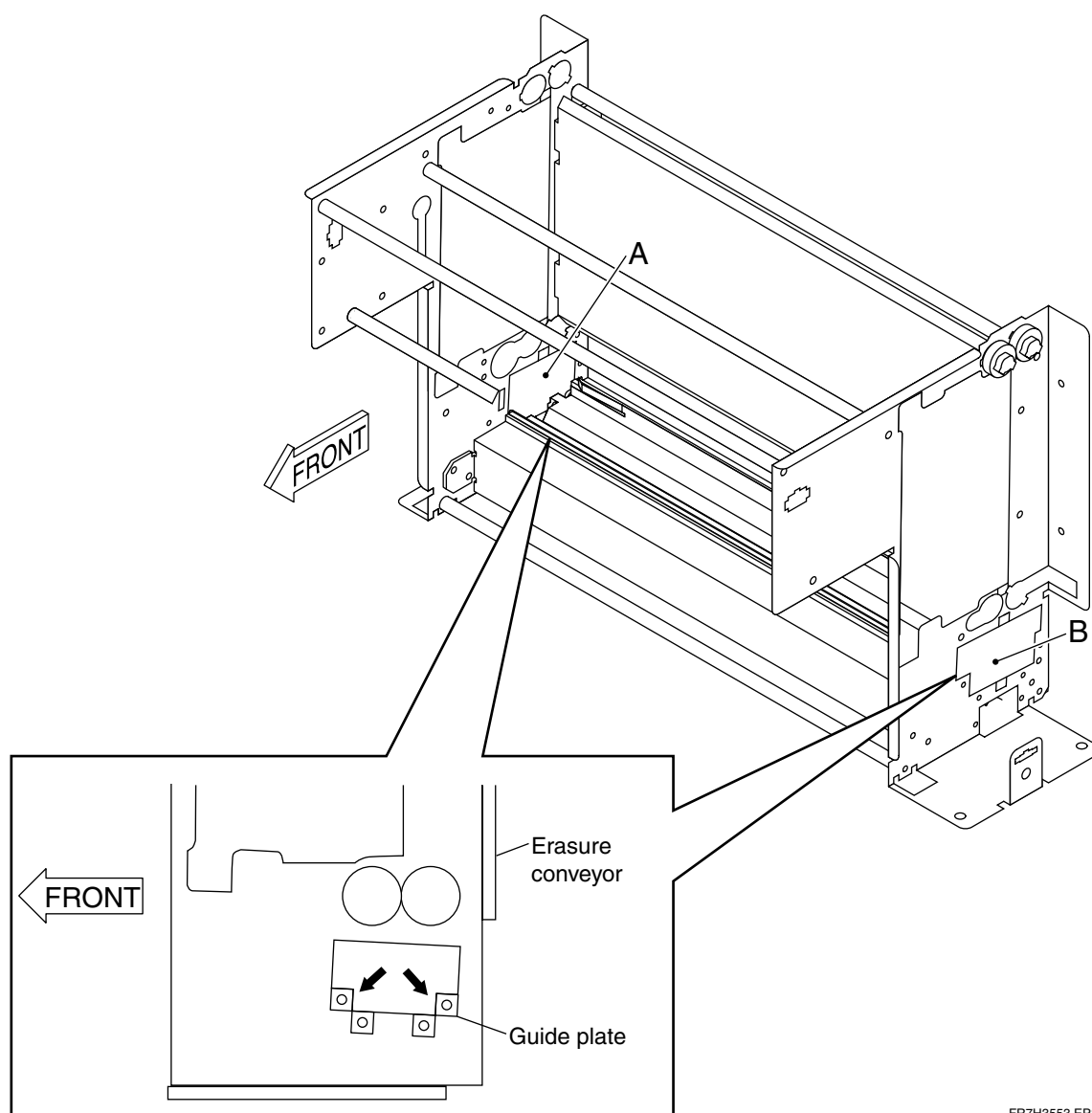


## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

*When installing the guide plates, secure them while pressing them in the directions of the arrows shown below. The guide plates must be pressed against sections A and B.*



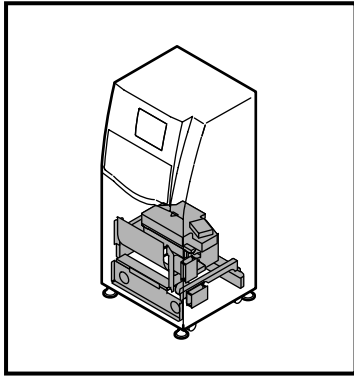
FR7H3553.EPS

## ■ Check

Make sure that the anti-static member is brought into contact with the roller.

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## 7. Pulling Out and Pushing In the Scanner Unit



FR7H3086.EPS



### CAUTION

*When servicing a PC board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the PC board.*

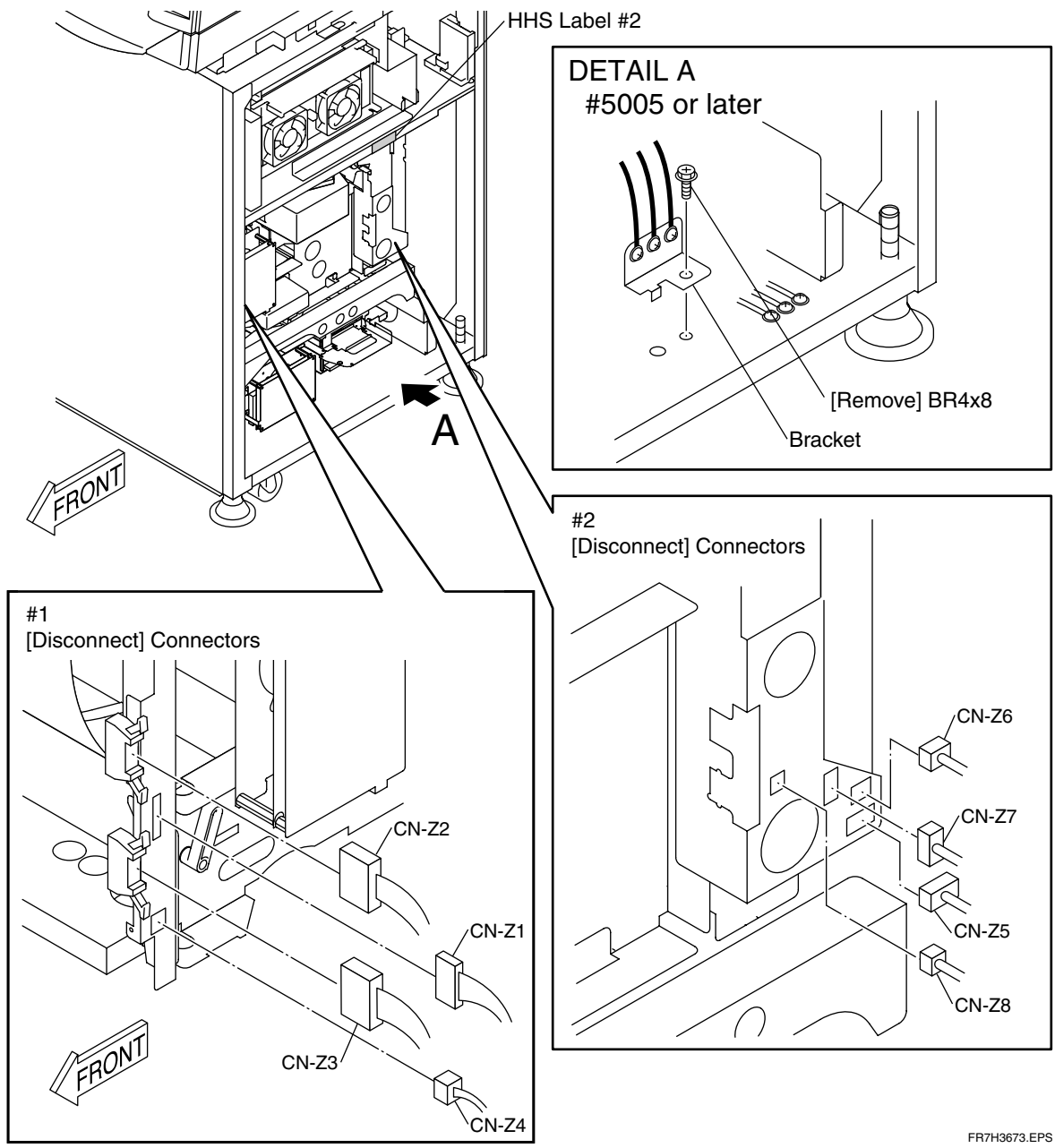
### ■ Pull-out procedure

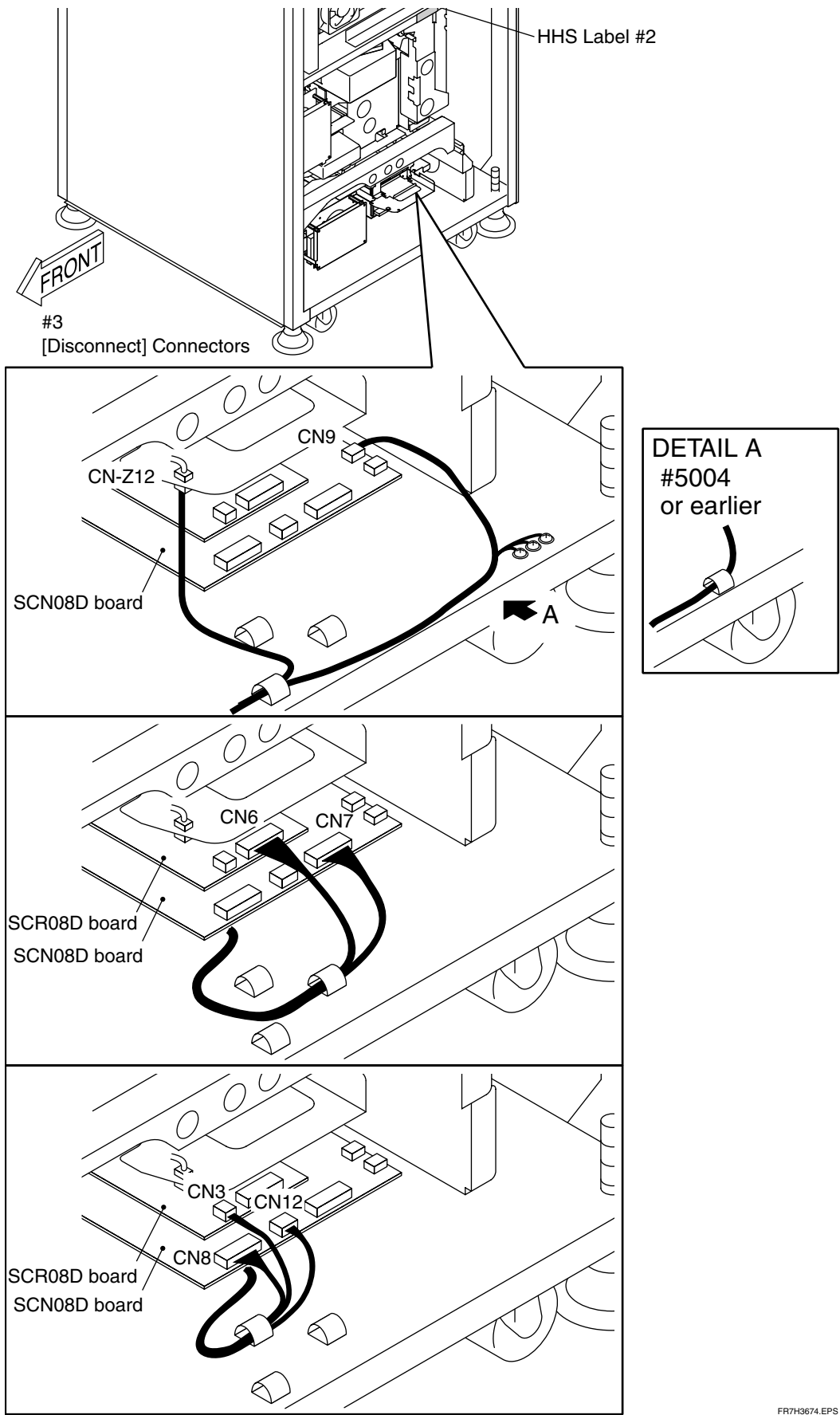
(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Right-hand inner cover

☞ “3. Removing and Installing the Covers”

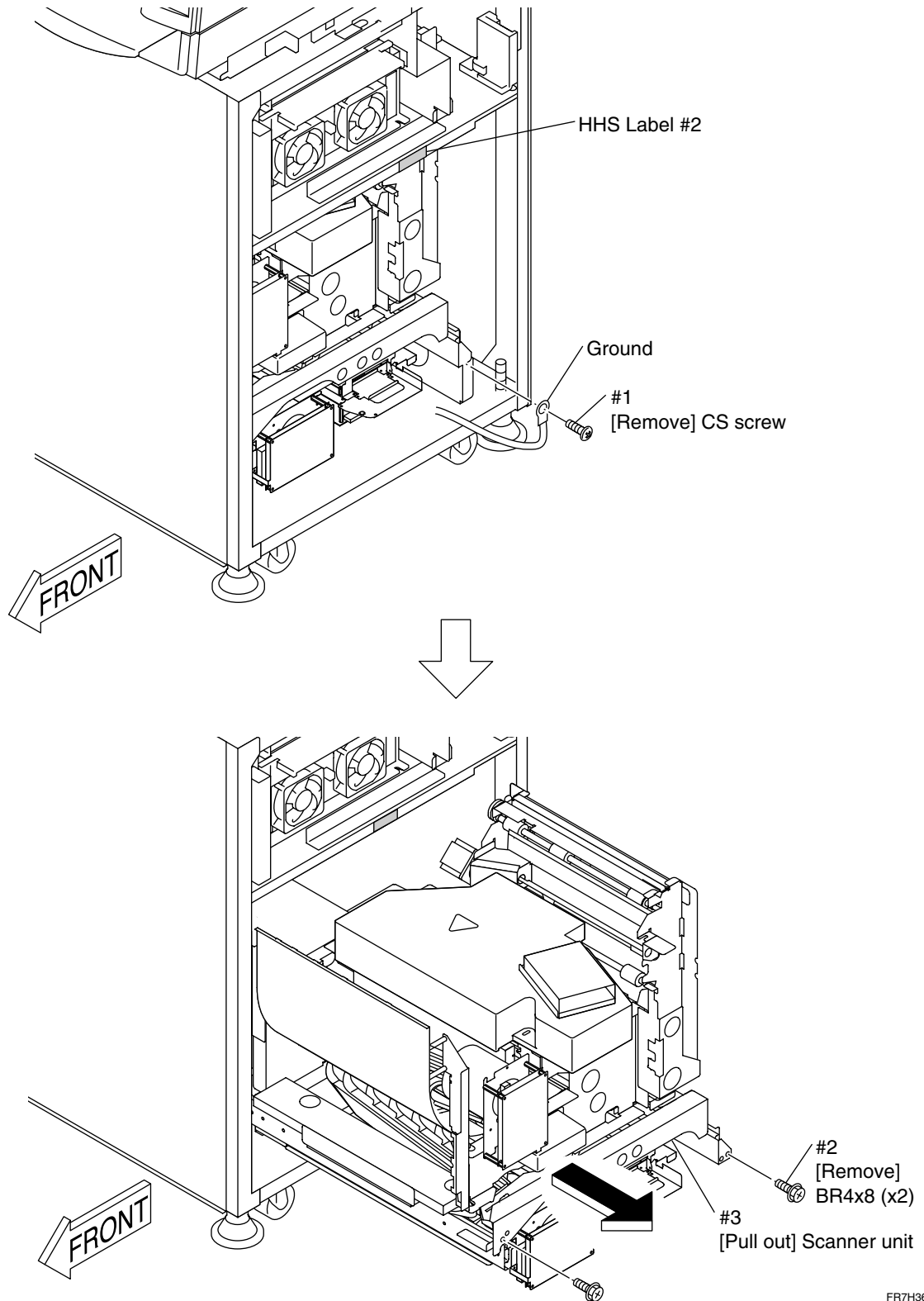
(2) Disconnect the connectors.





FR7H3674.EPS

(3) Pull out the scanner unit.

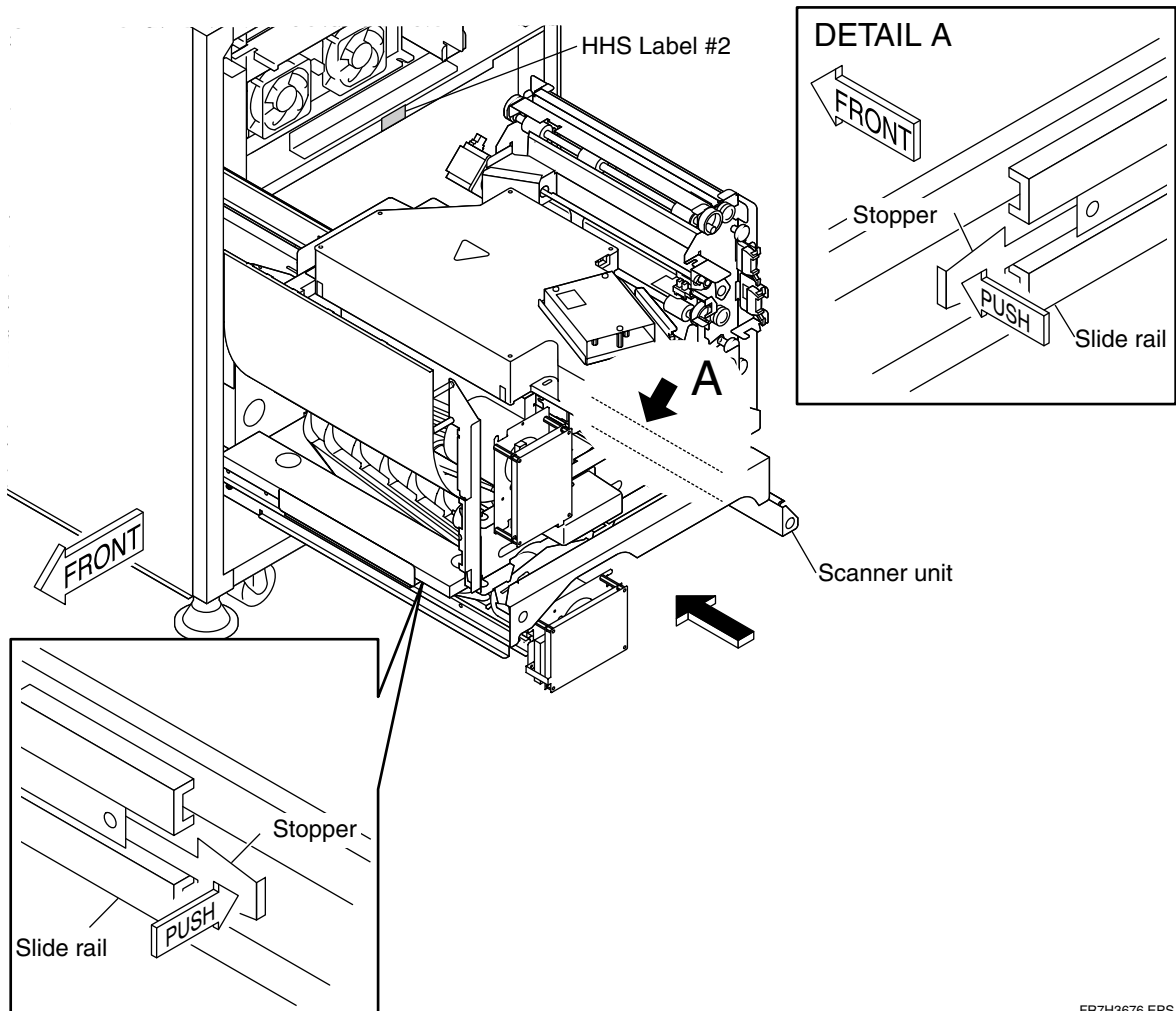


FR7H3675.EPS

## ■ Push-in procedure

### ◆ NOTES ◆

- When pushing the scanner unit into its position, exercise care so that disconnected connectors and cables are not caught.
- Push the scanner unit into the machine while depressing the slide rail stoppers.



FR7H3676.EPS

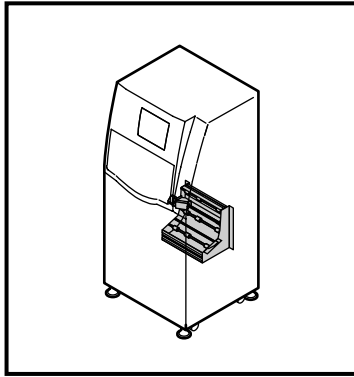
Push scanner unit into its position by reversing the pull-out procedure.

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## 8. Removing and Installing the Side-Positioning Conveyor

### 8.1 Side-Positioning Conveyor



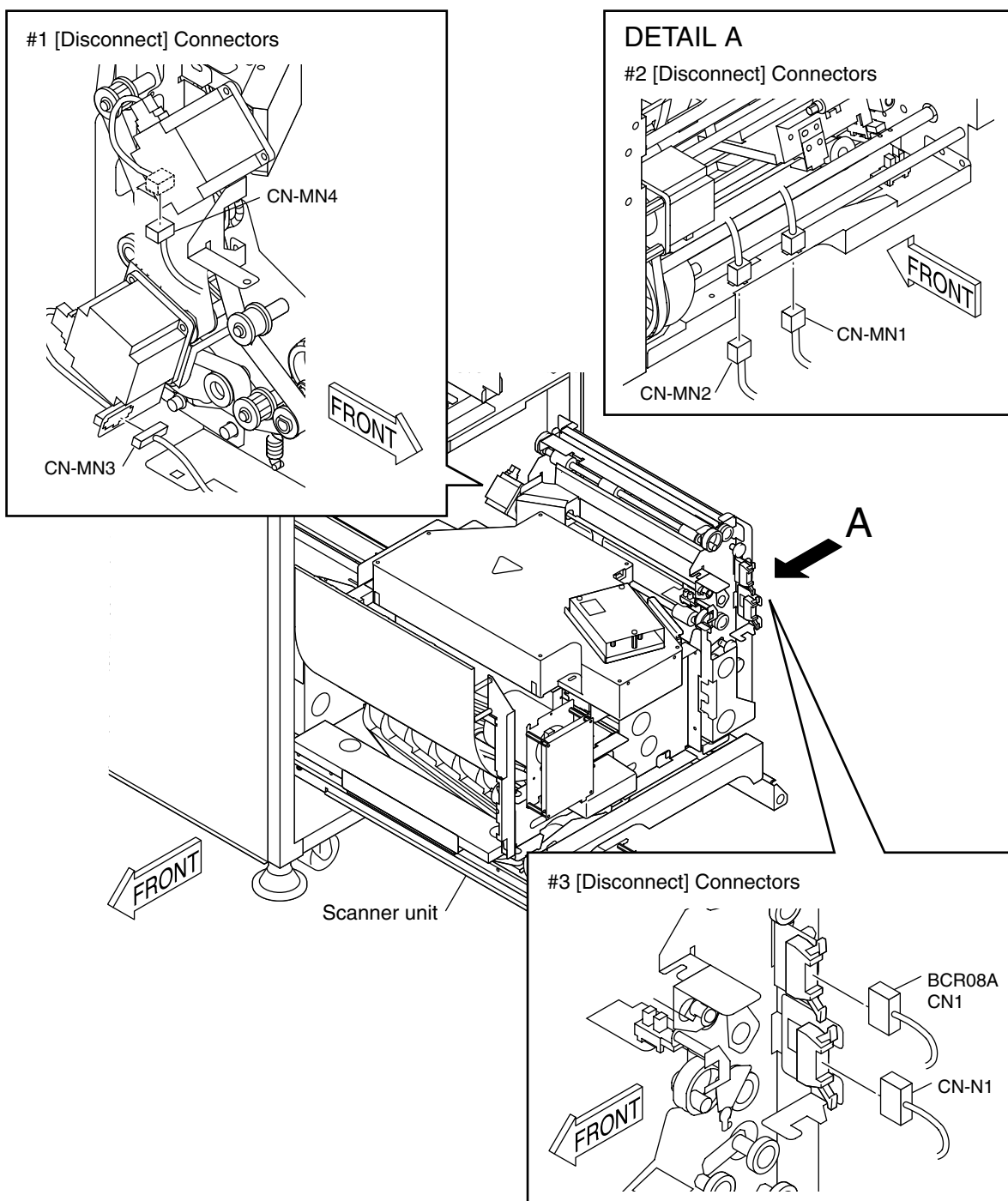
FR7H3046.EPS

#### ■ Removal procedure

- (1) Pull out the scanner unit.

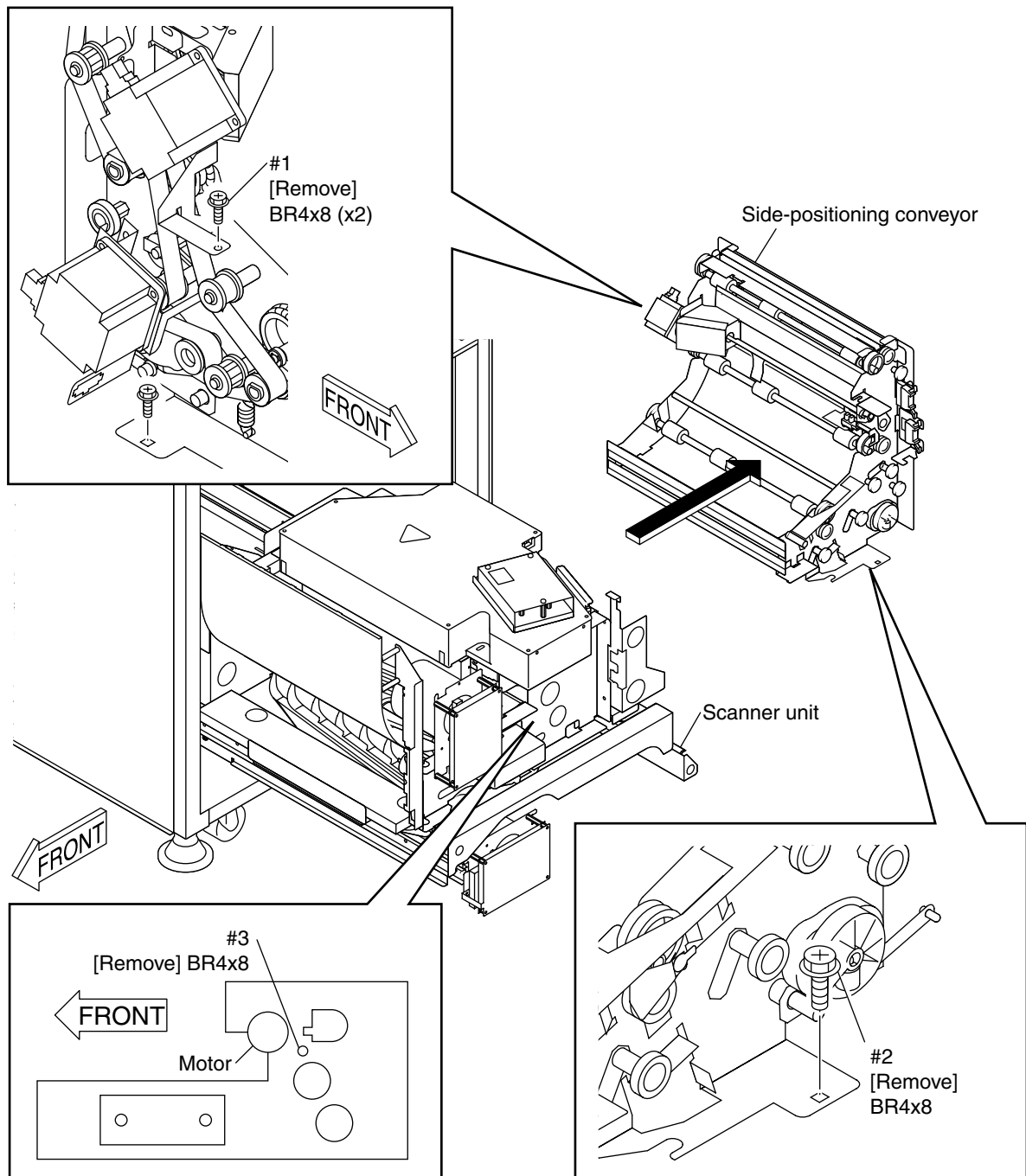
☞ “7. Pulling Out and Pushing In the Scanner Unit”

(2) Disconnect the connectors.



FR7H3110.EPS

## (3) Remove the side-positioning conveyor.

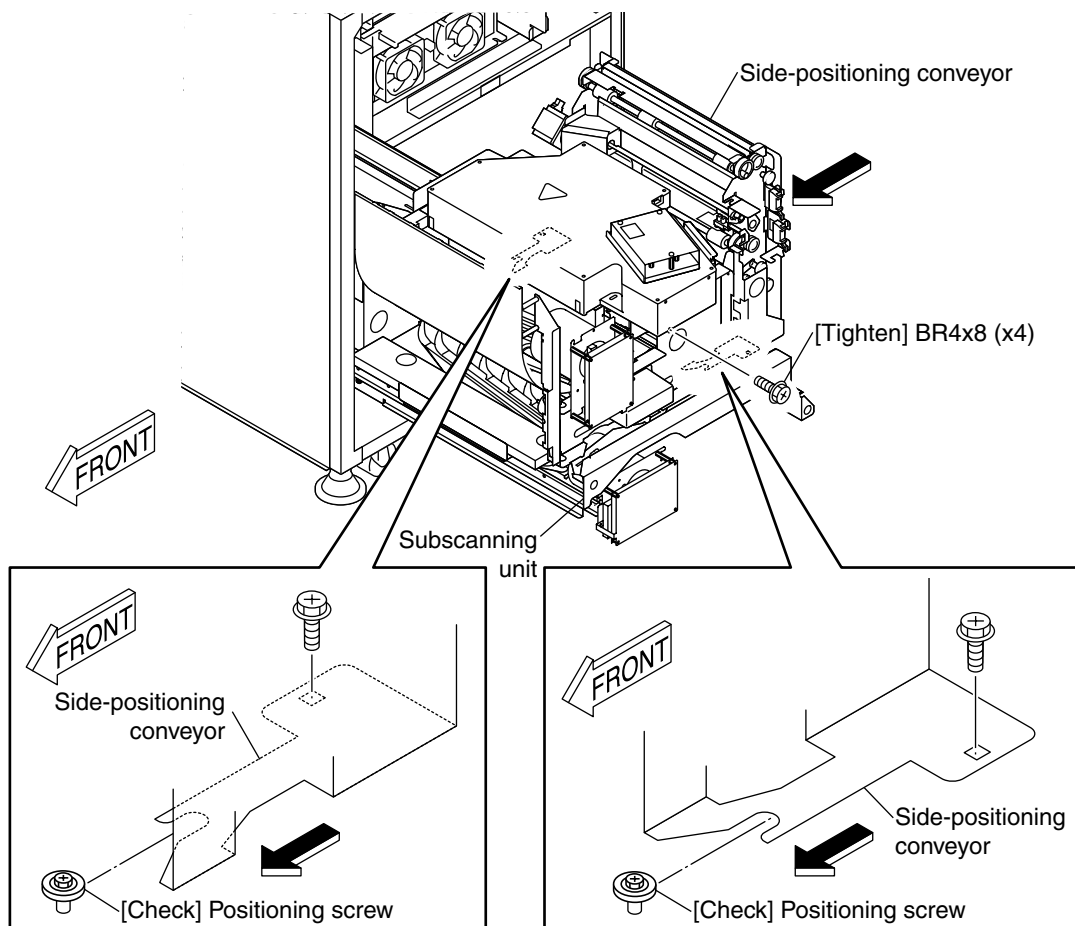


FR7H3180.EPS

## ■ Installation procedure

### ◆ NOTES ◆

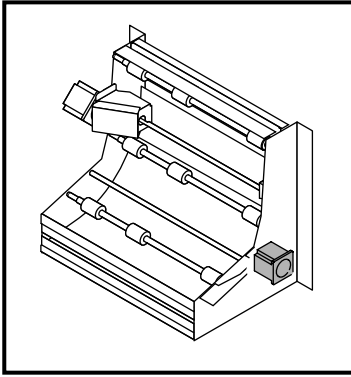
- Press the side-positioning conveyor against the positioning screws.
- When tightening the screws, begin by tightening the screws on the right-hand side plate for the subscanning unit.



FR7H3111.EPS

Accomplish installation by reversing the removal procedure.

## 8.2 Grip Release Motor (MN2)



FR7H3047.EPS

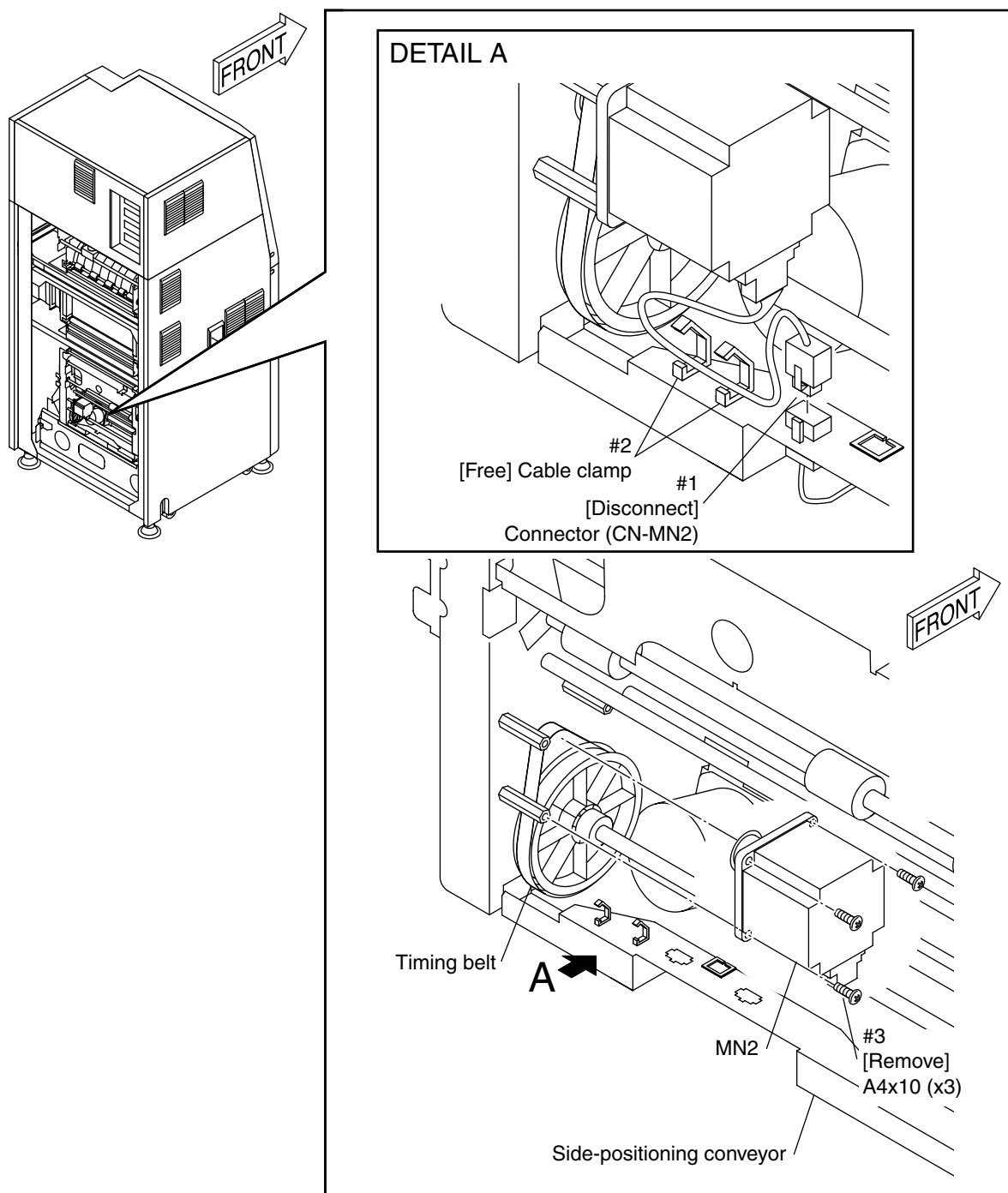
### ■ Removal procedure

(1) Remove the following cover:

- Lower rear cover

☞ “3. Removing and Installing the Covers”

(2) Remove the grip release motor (MN2).

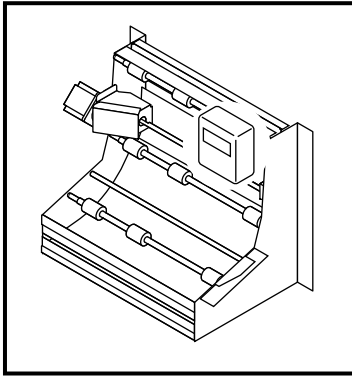


FR7H3101.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 8.3 Barcode Reader (BCRN1)



FR7H3048.EPS

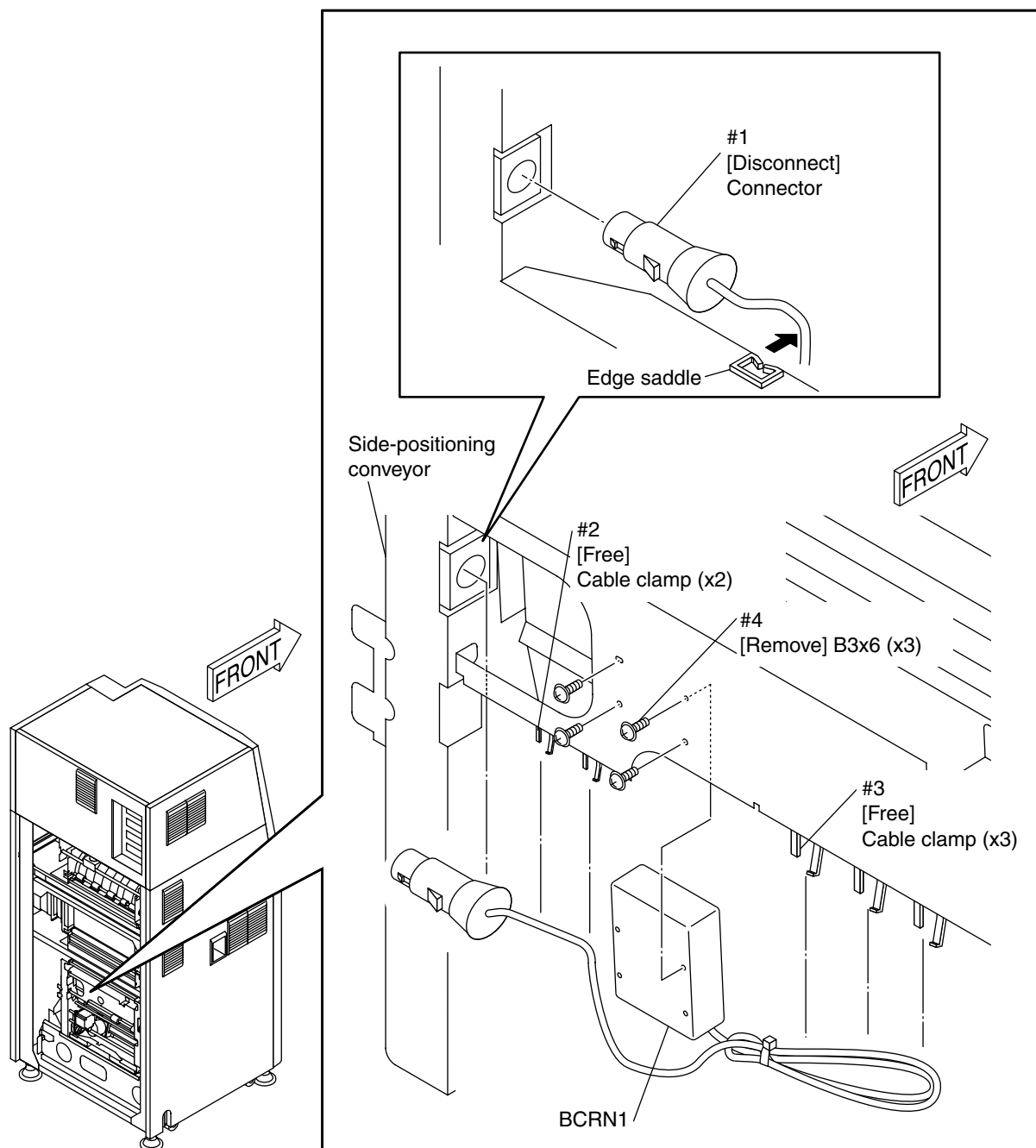
### ■ Removal procedure

(1) Remove the following cover:

- Lower rear cover

☞ “3. Removing and Installing the Covers”

(2) Remove the barcode reader (BCRN1).



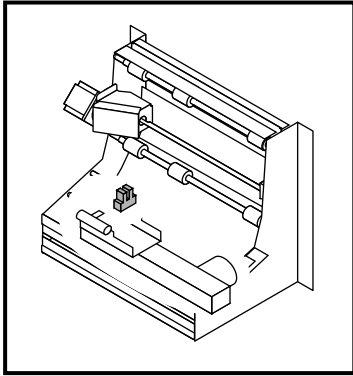
FR7H3102.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.



## 8.4 Side-Positioning Mechanism HP Sensor (SN1)



FR7H3049.EPS

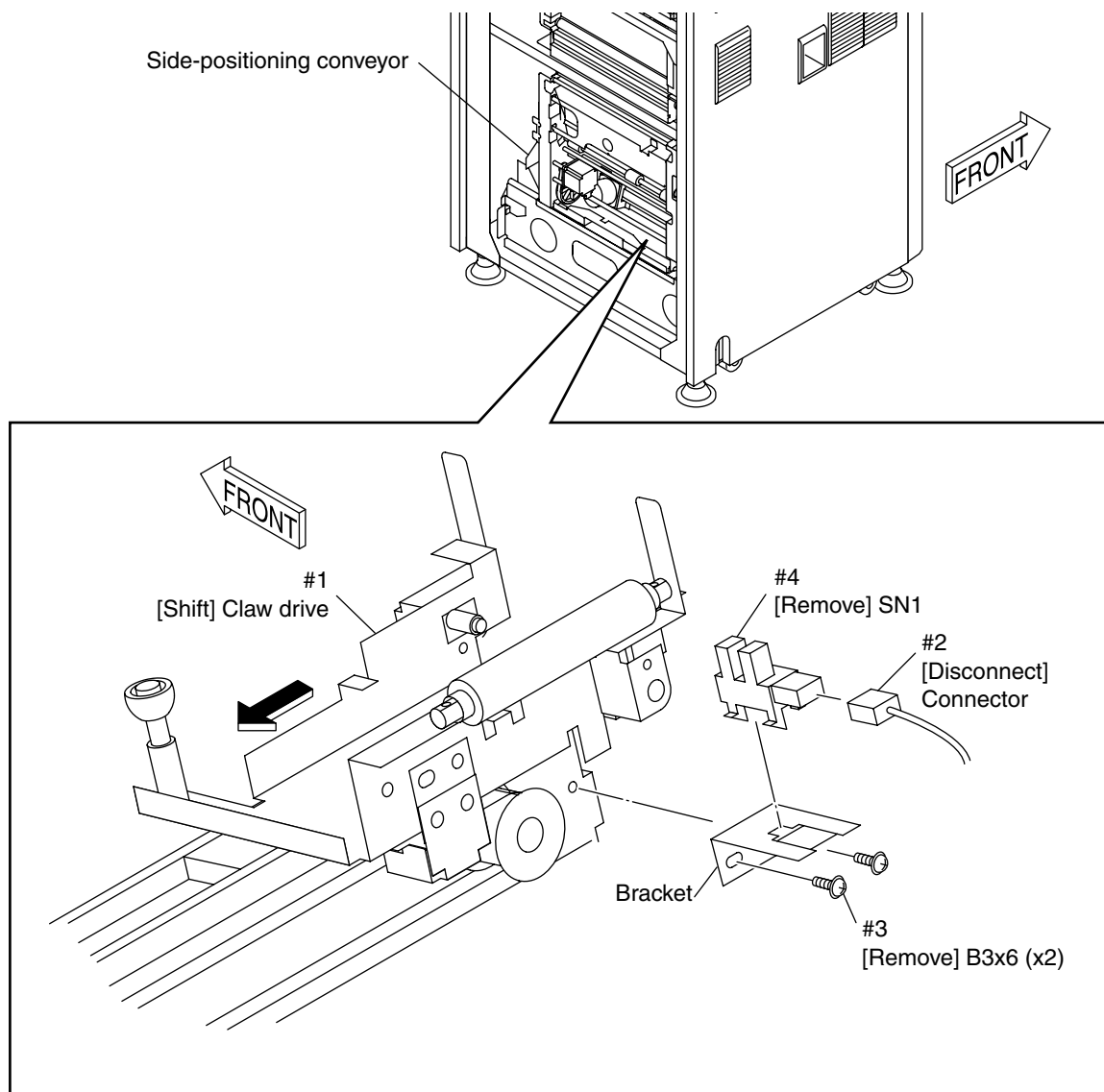
### ■ Removal procedure

(1) Remove the following cover:

- Lower rear cover

👉 “3. Removing and Installing the Covers”

(2) Remove the side-positioning mechanism HP sensor (SN1).

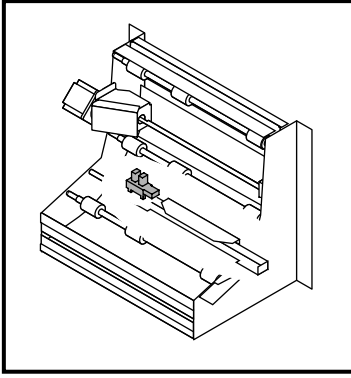


FR7H3103.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 8.5 Grip Release HP Sensor (SN2)



FR7H3050.EPS

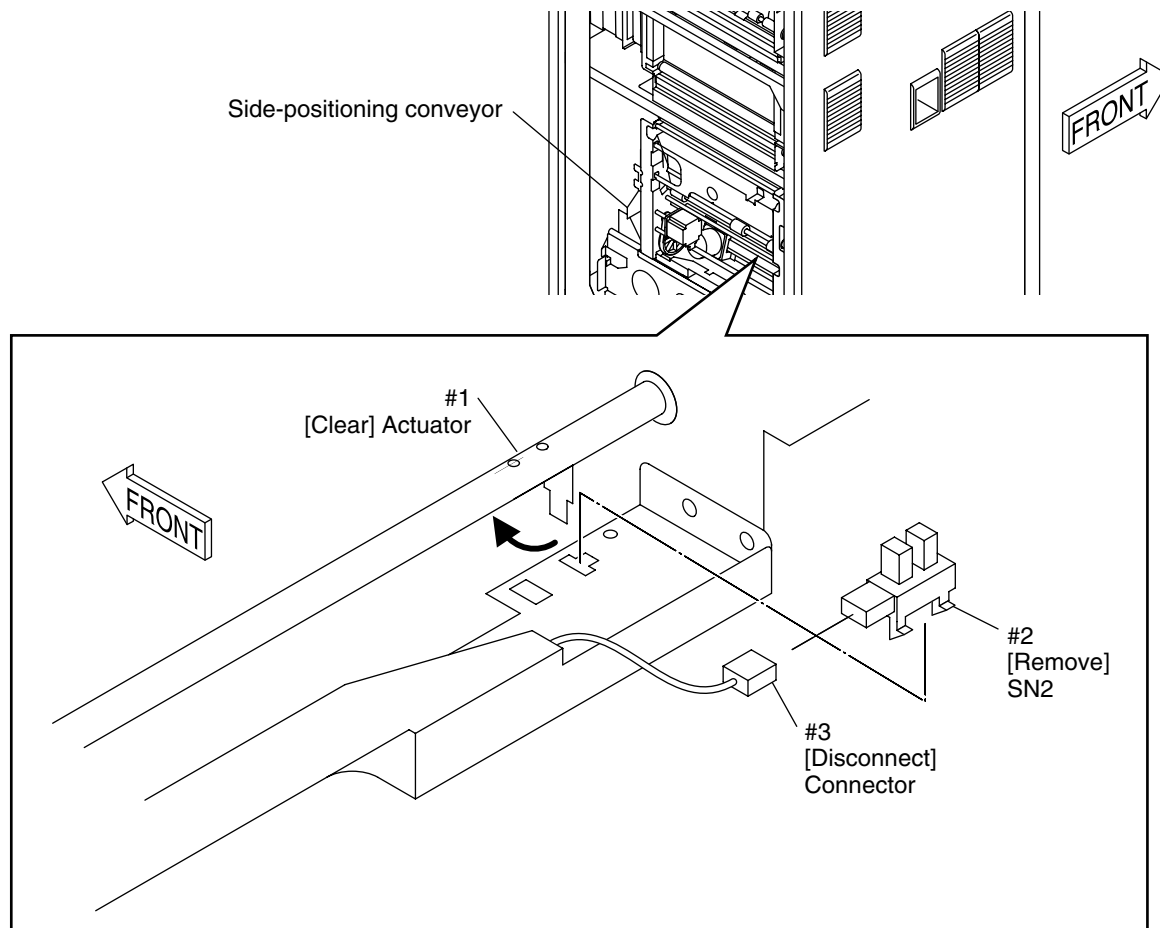
### ■ Removal procedure

(1) Remove the following cover:

- Lower rear cover

☞ “3. Removing and Installing the Covers”

(2) Remove the grip release HP sensor (SN2).

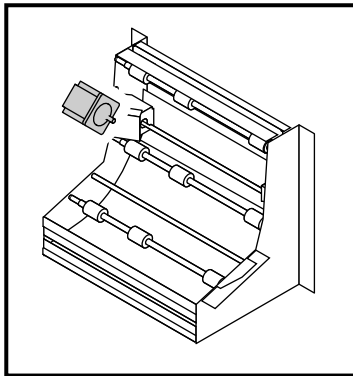


FR7H3104.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

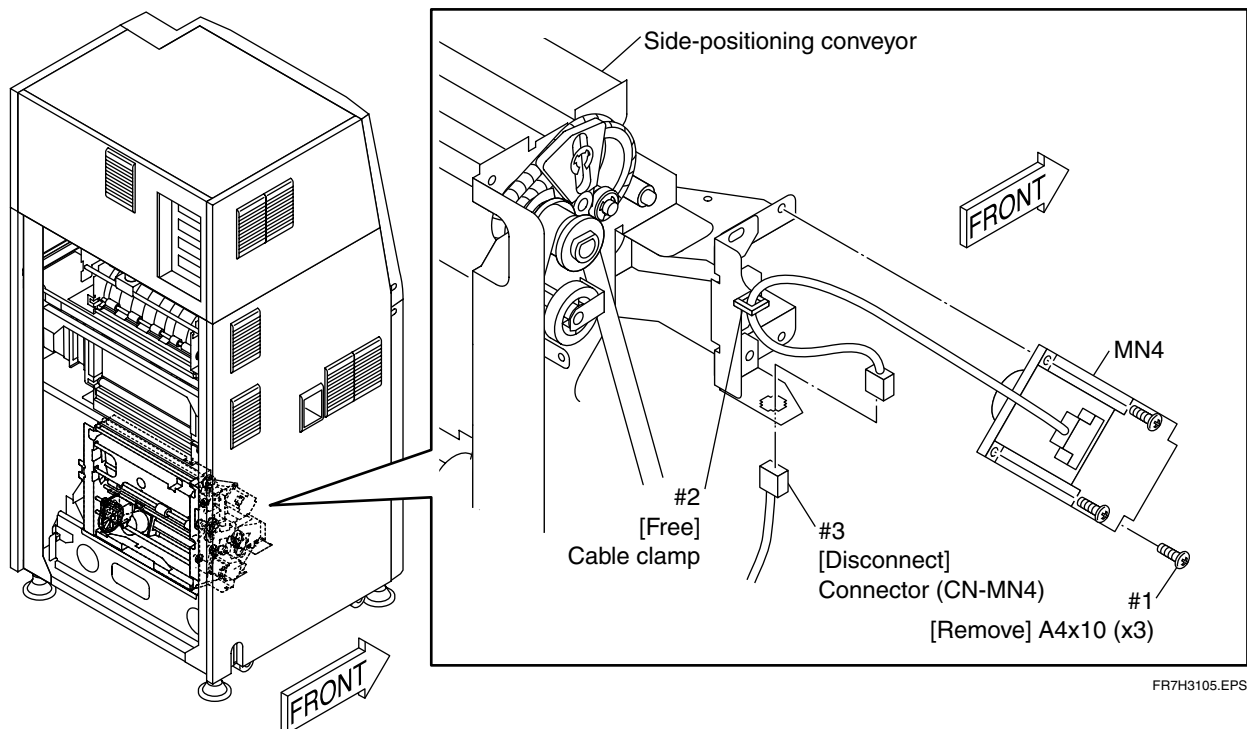
## 8.6 Cleaning Guide Drive Motor (MN4)



FR7H3051.EPS

### ■ Removal procedure

- (1) Remove the following cover:
  - Lower rear cover
- 👉 “3. Removing and Installing the Covers”
- (2) Remove the cleaning guide drive motor (MN4).

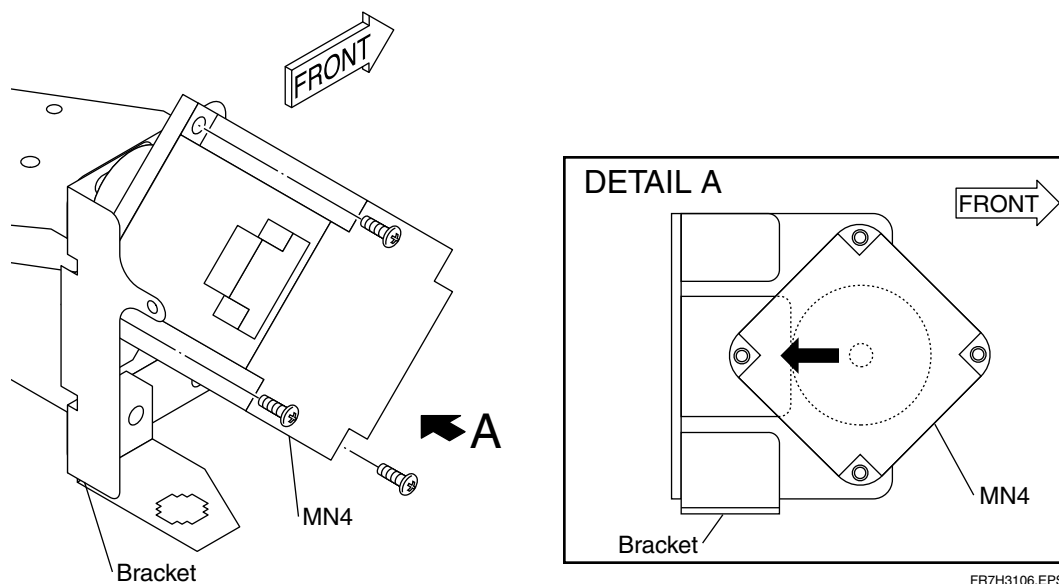


FR7H3105.EPS

## ■ Installation procedure

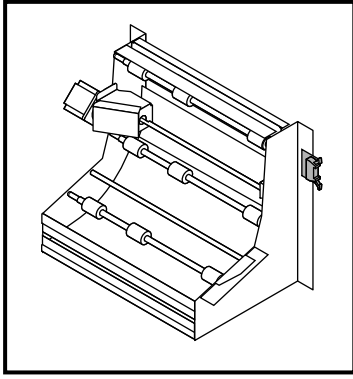
### ◆ NOTES ◆

- When installing the cleaning guide drive motor (MN4), ensure that the gears are in mesh.
- To install the cleaning guide drive motor (MN4), loosely attach the three screws and then shift the MN4 toward the rear end.



Accomplish installation by reversing the removal procedure.

## 8.7 BCR08A Board



FR7H3052.EPS

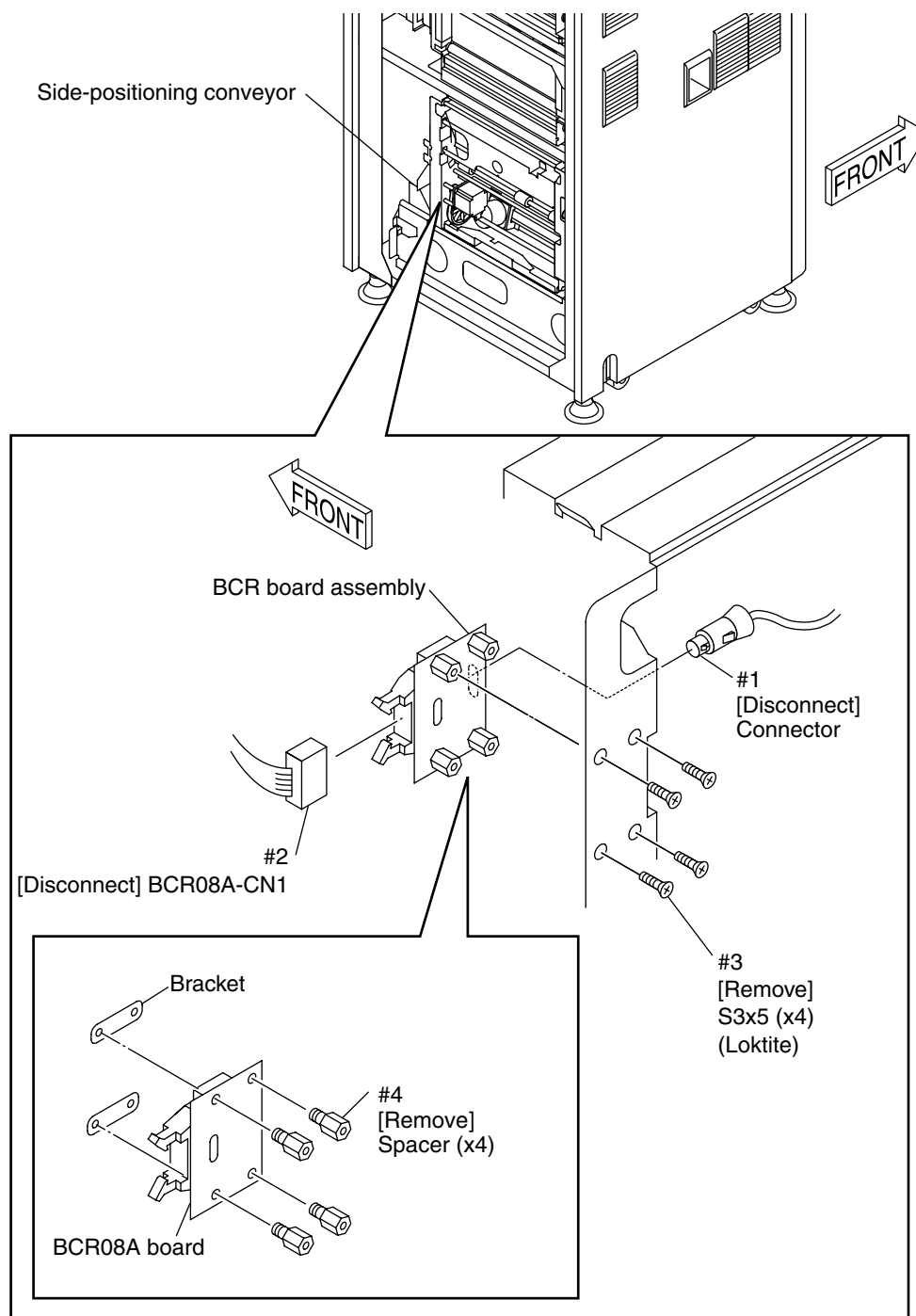
### ■ Removal procedure

(1) Remove the following cover:

- Lower rear cover

☞ “3. Removing and Installing the Covers”

(2) Remove the BCR08A board.



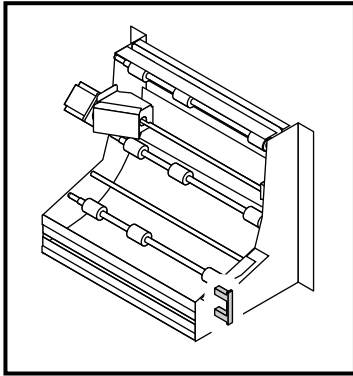
FR7H3107.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.



## 8.8 Side-Positioning IP Sensor (SN3)



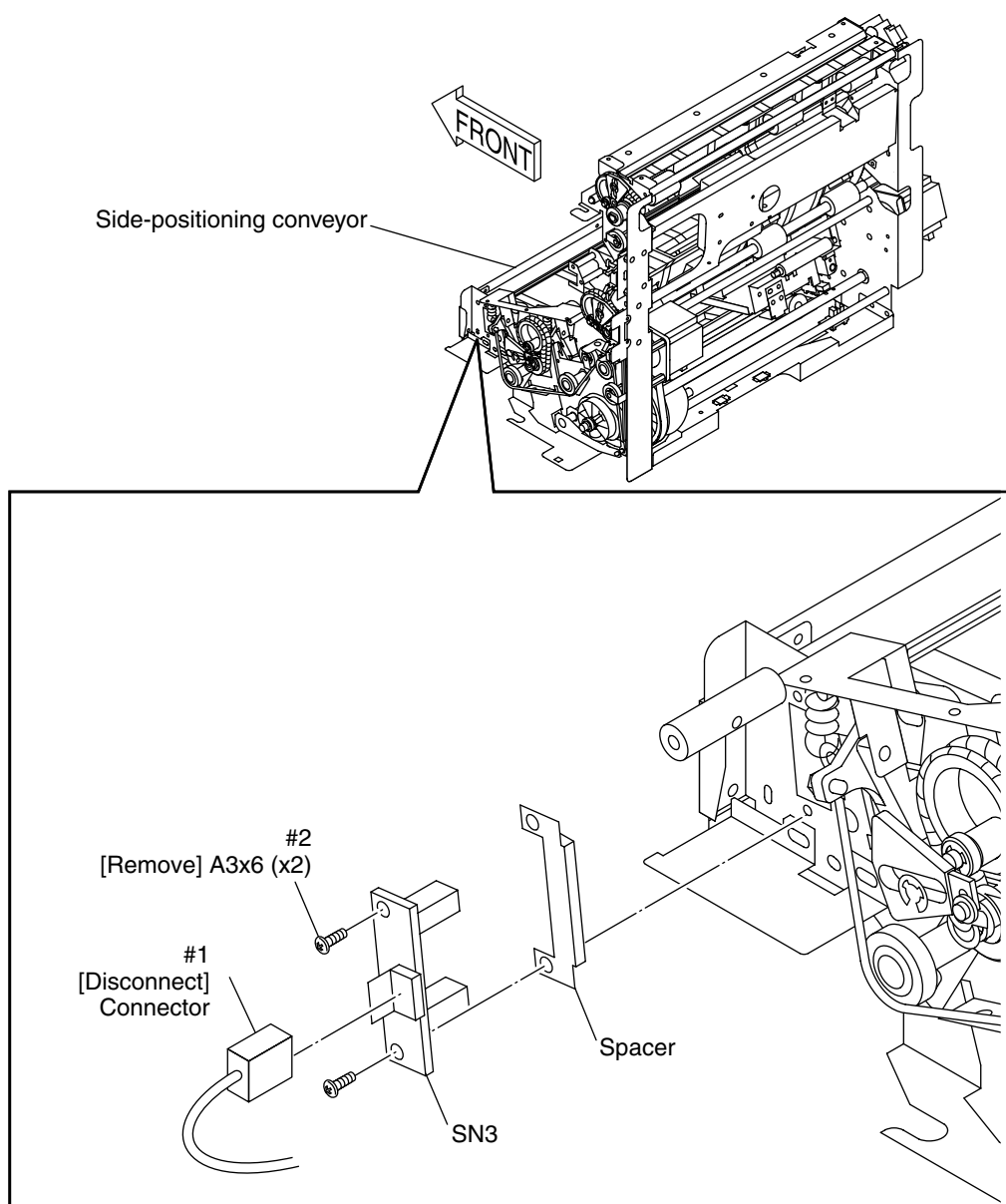
FR7H3053.EPS

### ■ Removal procedure

- (1) Remove the side-positioning conveyor.

☞ “8.1 Side-Positioning Conveyor”

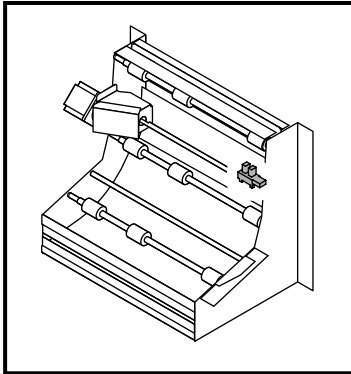
(2) Remove the side-positioning IP sensor (SN3).



## ■ Installation procedure

Accomplish installation by reversing the removal procedure.

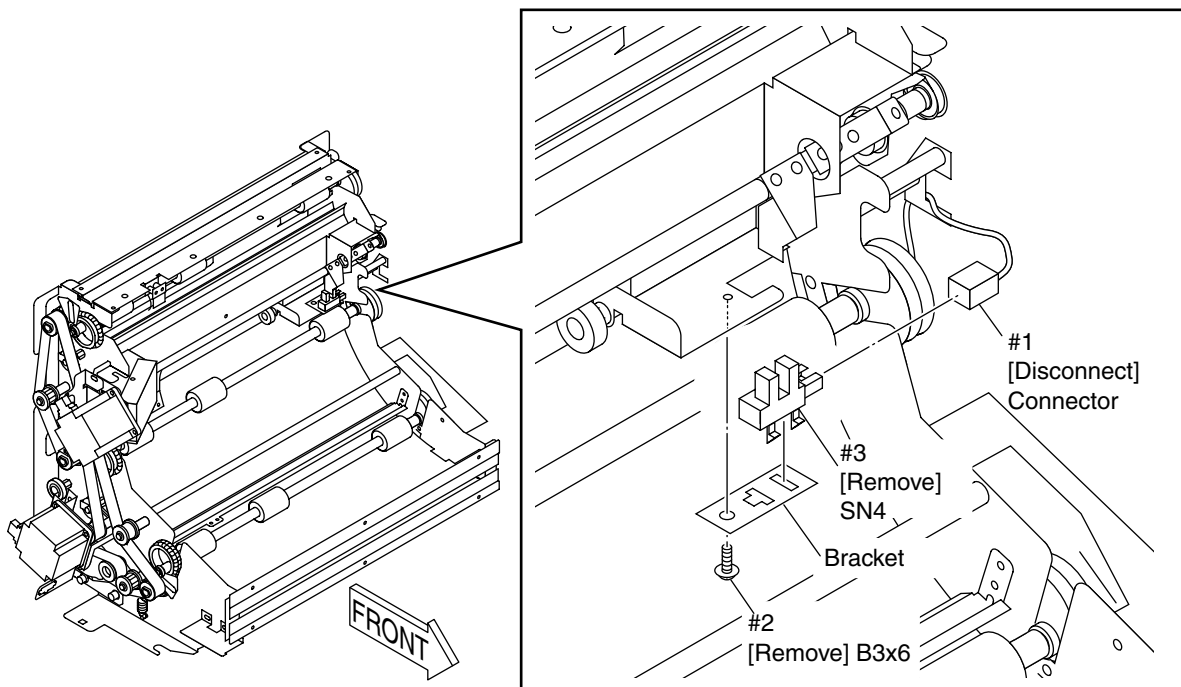
## 8.9 Cleaning Guide HP Sensor (SN4)



FR7H3054.EPS

### ■ Removal procedure

- (1) Remove the side-positioning conveyor.  
☞ “8.1 Side-Positioning Conveyor”
- (2) Remove the cleaning guide HP sensor (SN4).

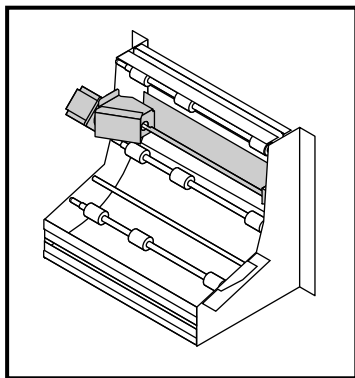


FR7H3113.EPS

**■ Installation procedure**


Accomplish installation by reversing the removal procedure.

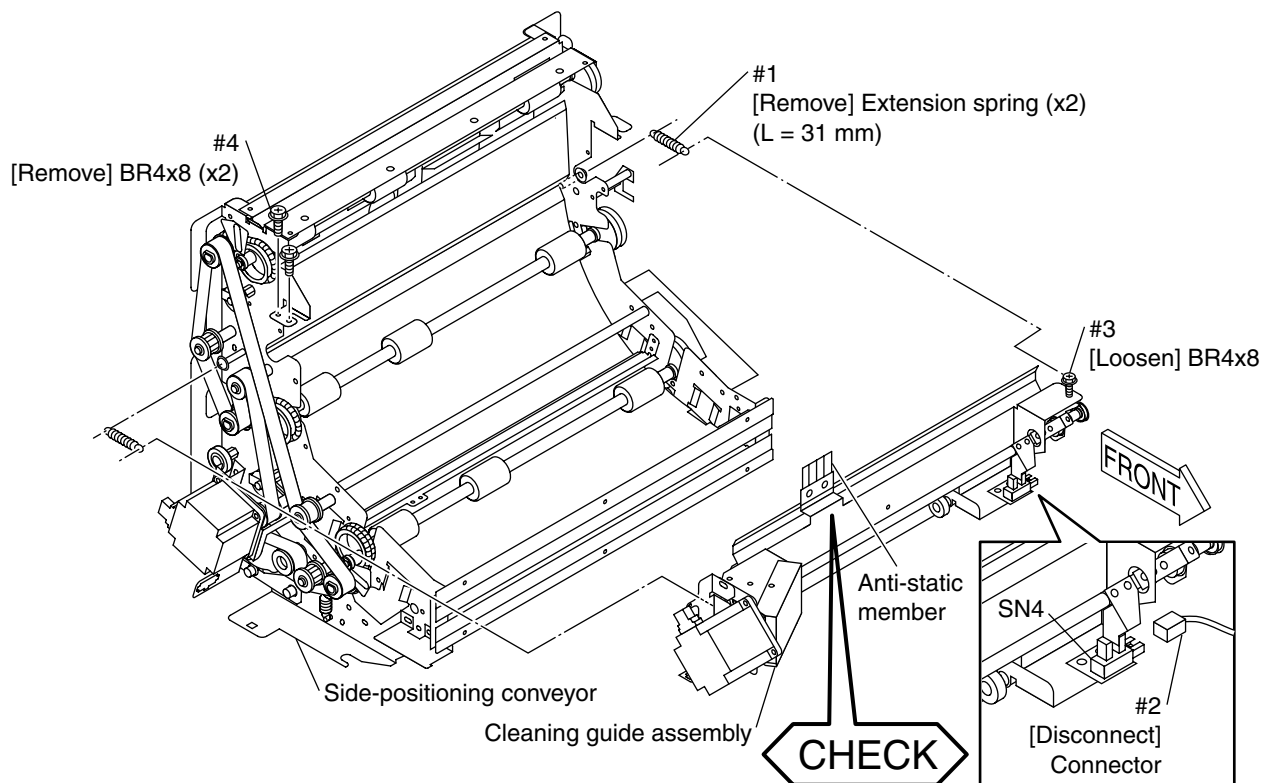
## 8.10 Cleaning Guide Assembly



FR7H3055.EPS

### ■ Removal procedure

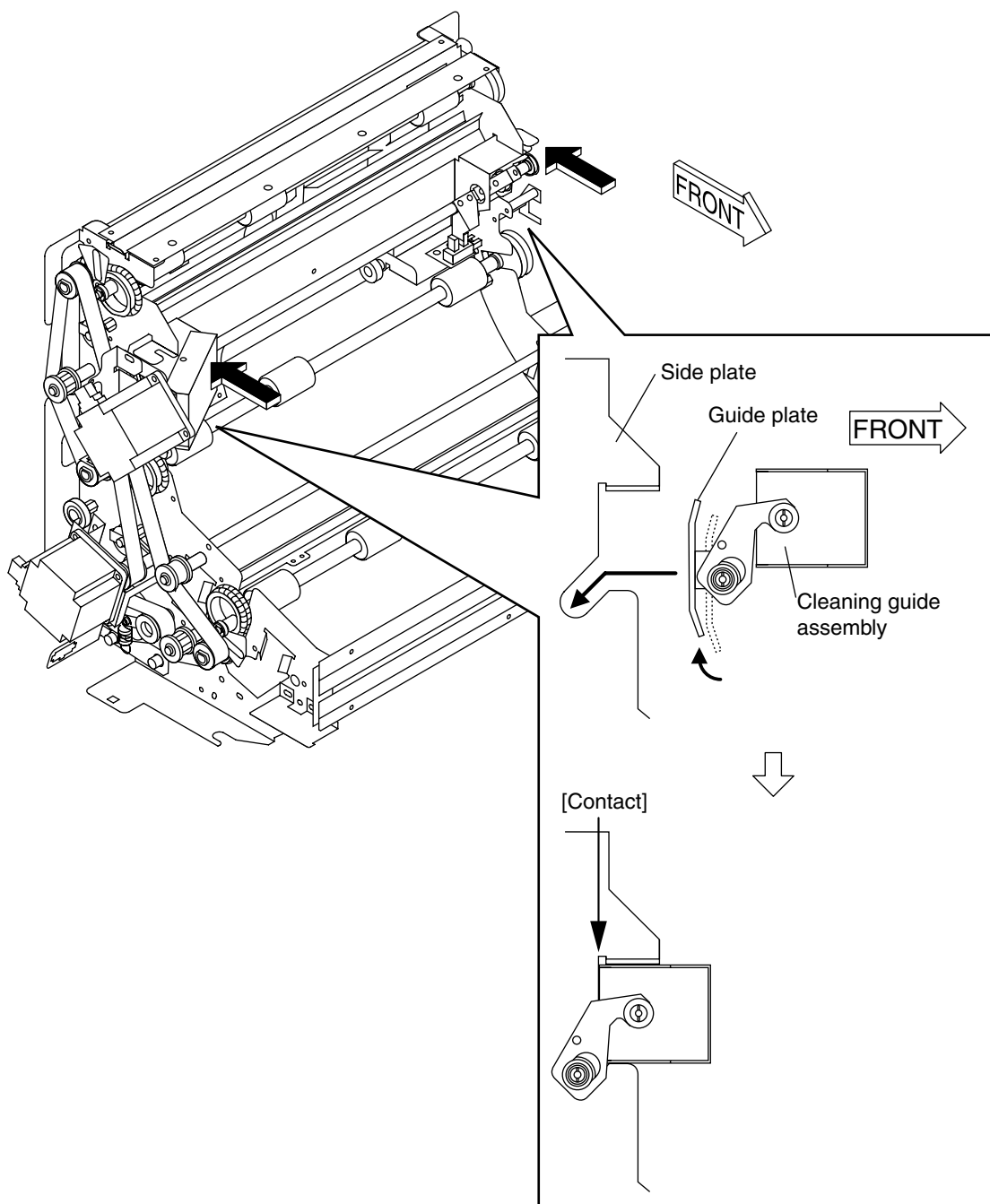
- (1) Remove the side-positioning conveyor.  
 "8.1 Side-Positioning Conveyor"
- (2) Remove the cleaning guide assembly.



FR7H3114.EPS

**■ Installation procedure****◆ INSTRUCTION ◆**

*When installing the cleaning guide assembly, press it against the right- and left-hand side plates of the side-positioning conveyor.*



FR7H3115.EPS

To accomplish installation, reverse the removal procedure.

**■ Check/adjustment procedure****● Before side-positioning conveyor installation**

Make sure that the anti-static member is brought into contact with the roller.

**● After side-positioning conveyor installation****CAUTION**

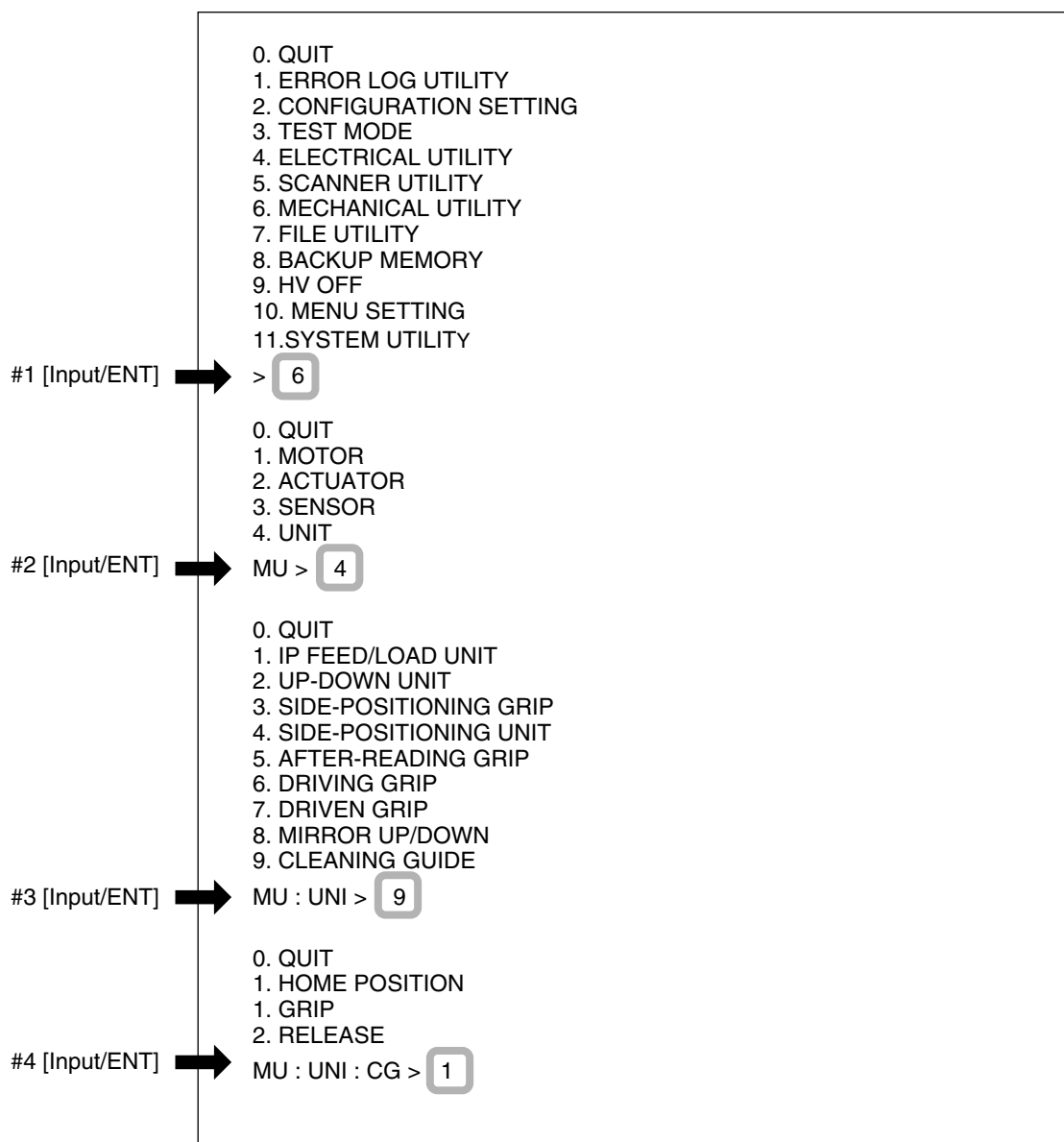
---

*When turning ON the machine with the laser protective housing (cover installed over the scanner unit) removed, be sure to turn OFF the high-voltage switch (S1) on the SCN board*

---

- (1) Turn ON the power.
- (2) Start the M-Utility.

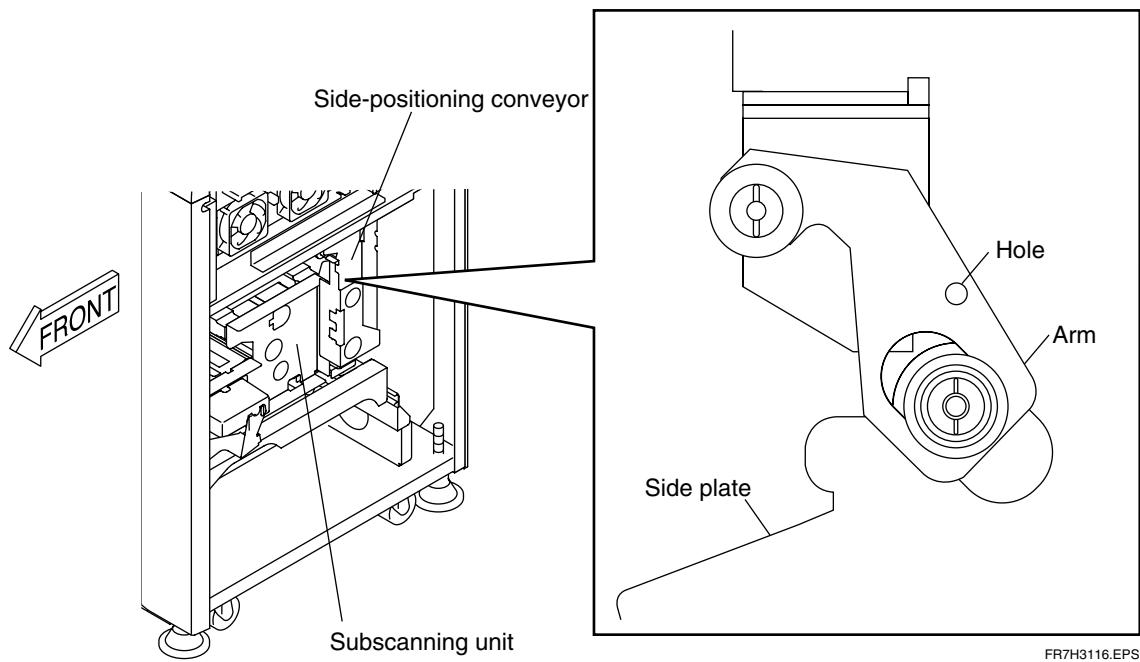
(3) Place the cleaning guide in its HP.



FR7H3171.EPS

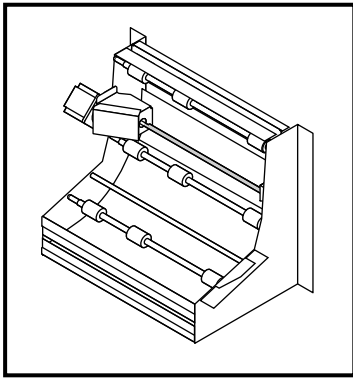


- (4) Check that the hole in the cleaning guide assembly arm is in alignment with the hole in the side-positioning conveyor side plate. If not, reinstall the cleaning guide assembly.




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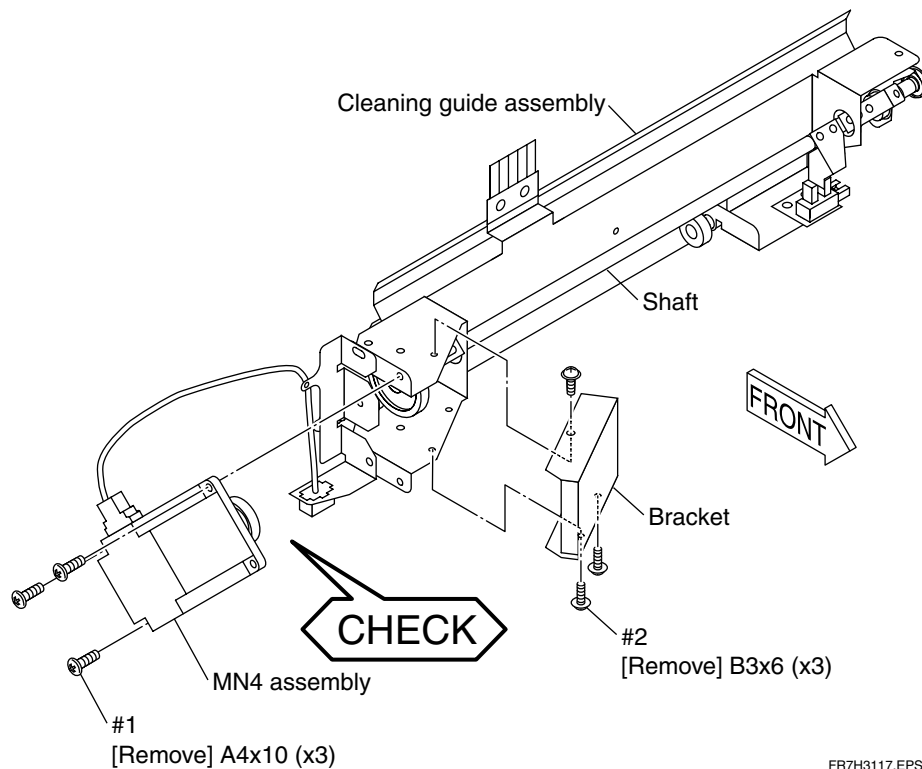
## 8.11 Shaft (for Cleaning Guide Assembly)



FR7H3056.EPS

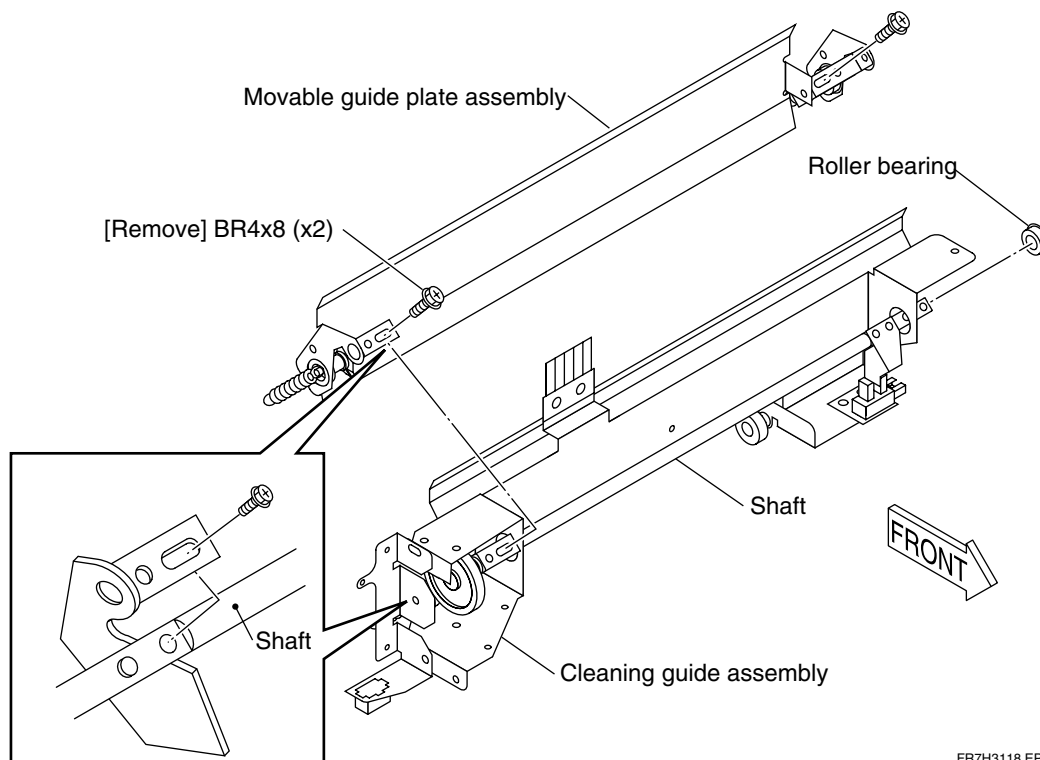
### ■ Removal procedure

- (1) Remove the cleaning guide assembly.  
 "8.10 Cleaning Guide Assembly"
- (2) Remove the MN4 assembly.

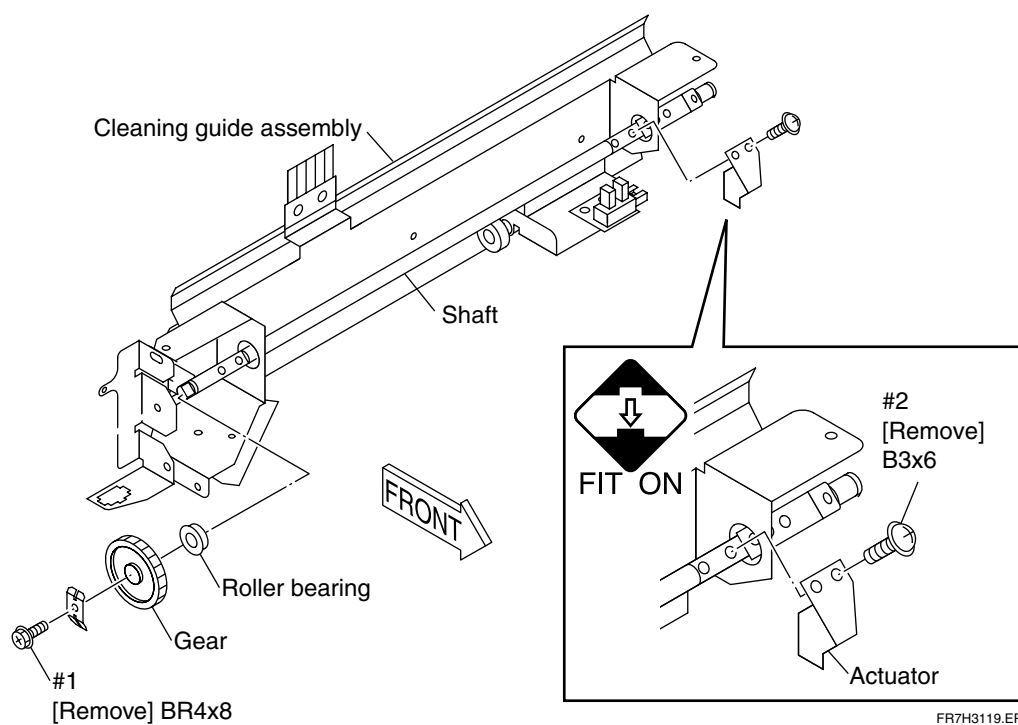


FR7H3117.EPS

(3) Remove the movable guide plate assembly.



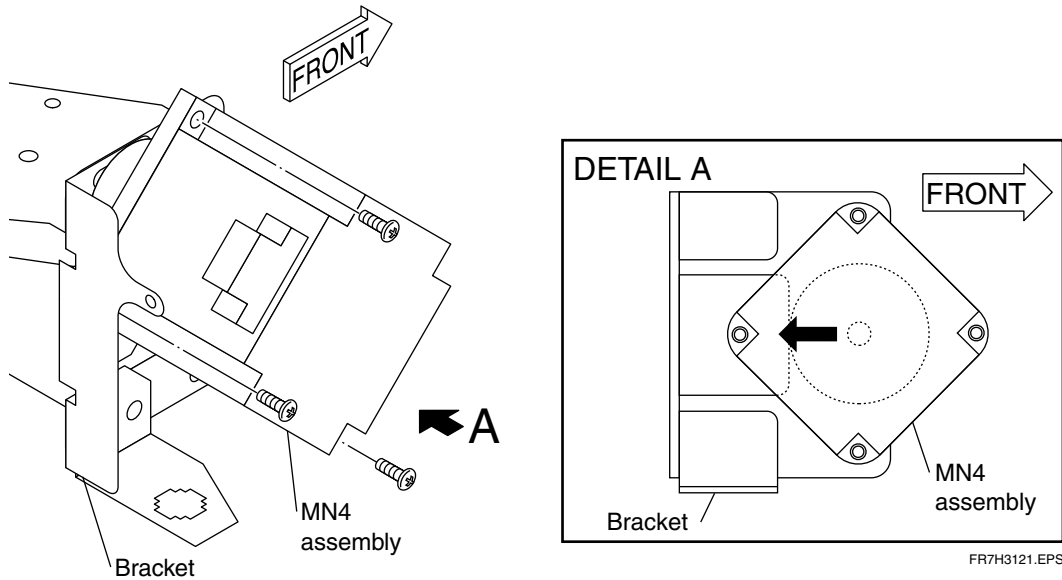
(4) Remove the shaft.



## ■ Installation procedure

### ◆ NOTES ◆

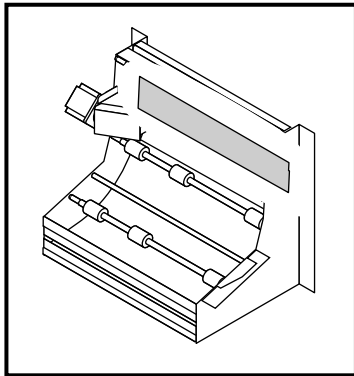
- When installing the cleaning guide driving motor (MN4), ensure that its gear meshes with the mating gear.
- To install the cleaning guide driving motor (MN4), loosely attach its three retaining screws and then shift it rearward.



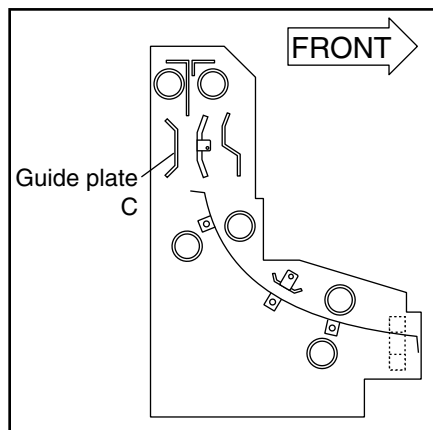
To accomplish installation, reverse the removal procedure.

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## 8.12 Guide Plate C




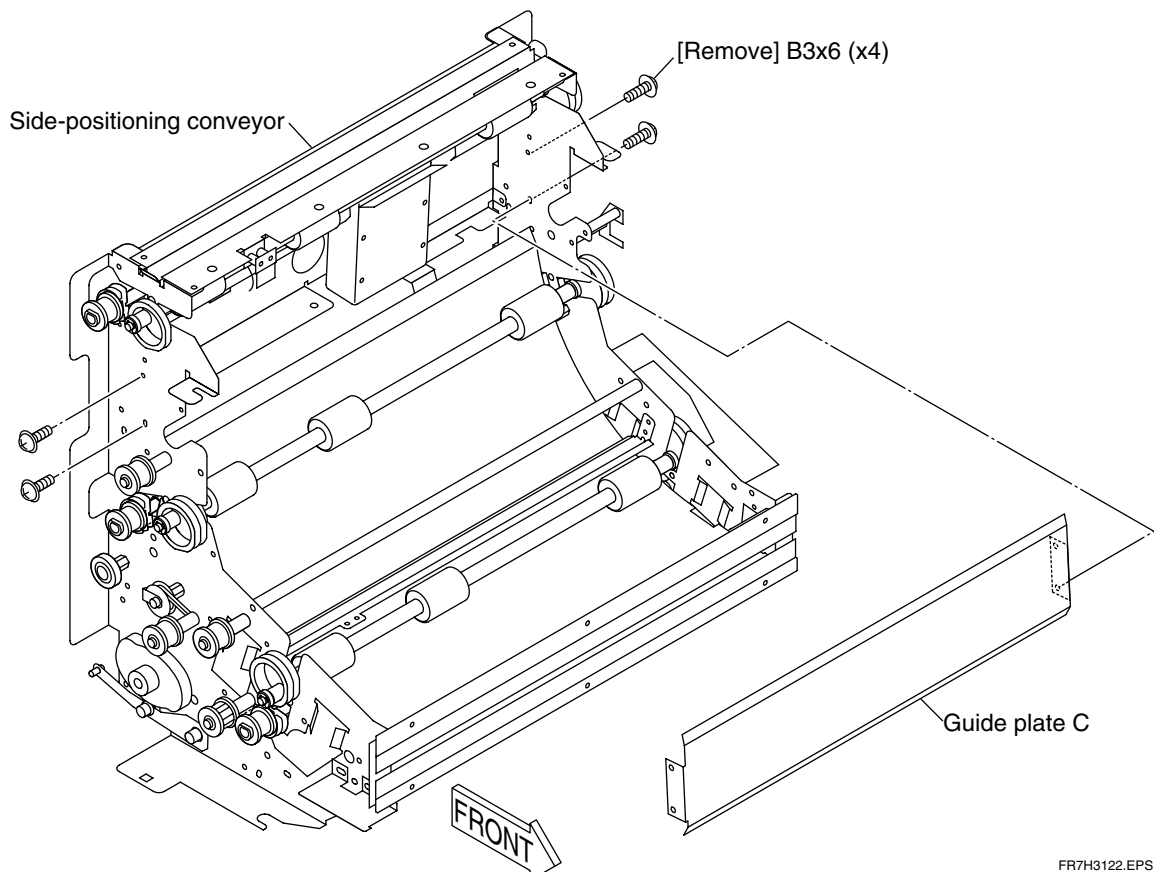
FR7H3057.EPS



FR7H3182.EPS

### ■ Removal procedure

- (1) Remove the cleaning guide assembly.  
 "8.10 Cleaning Guide Assembly"
- (2) Remove guide plate C.



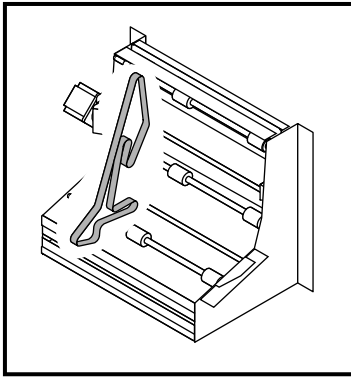
FR7H3122.EPS

**■ Installation procedure**

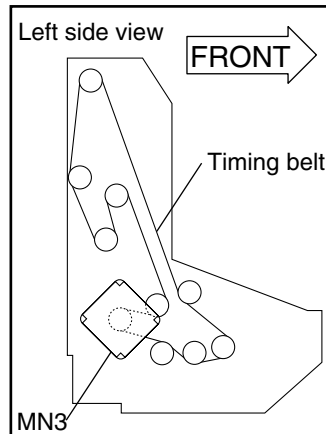
To accomplish installation, reverse the removal procedure.



## 8.13 Timing Belt (for IP Conveyance)



FR7H3058.EPS



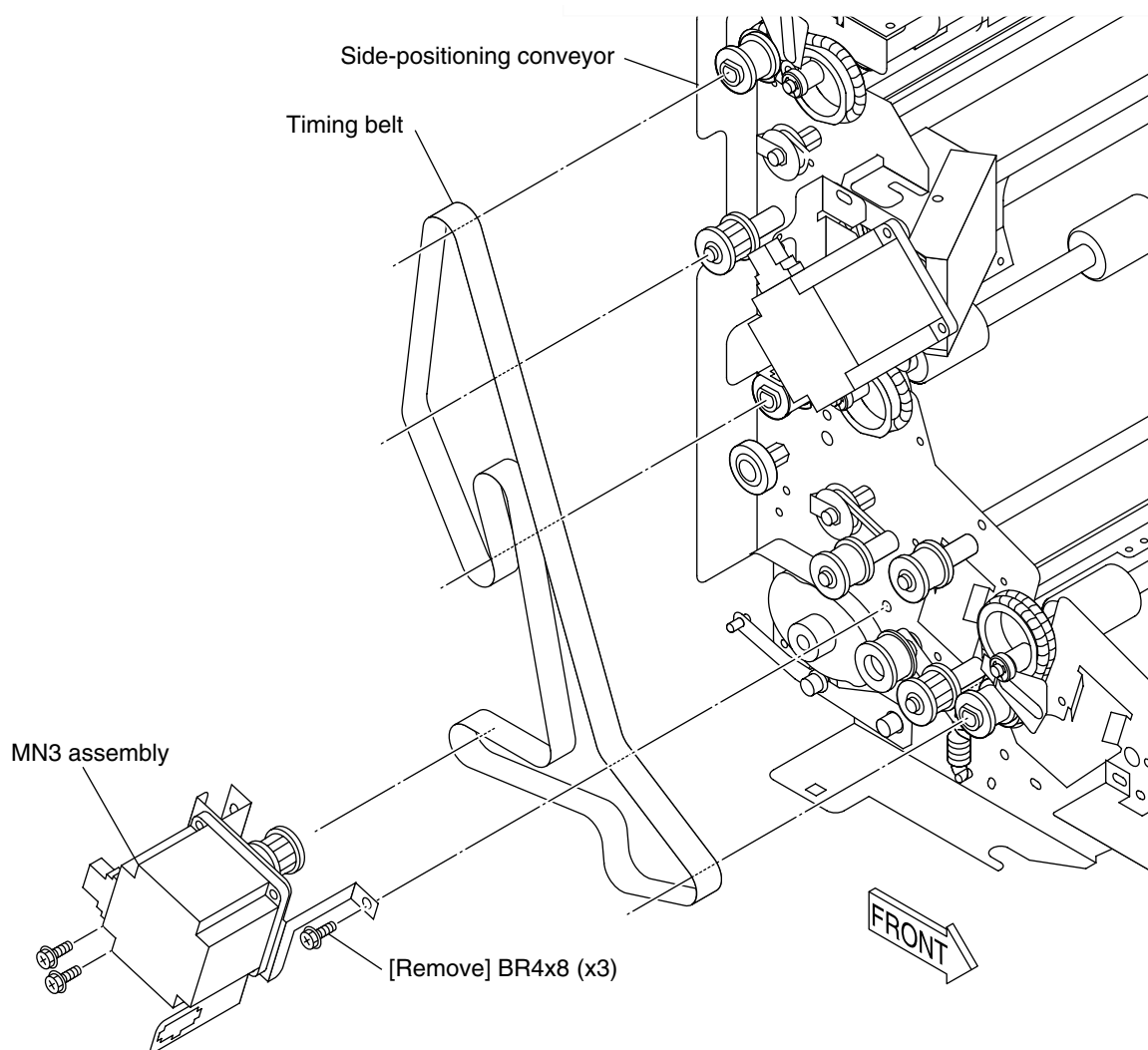
FR7H3123.EPS

### ■ Removal procedure

- (1) Remove the side-positioning conveyor.

☞ “8.1 Side-Positioning Conveyor”

(2) Remove the timing belt.

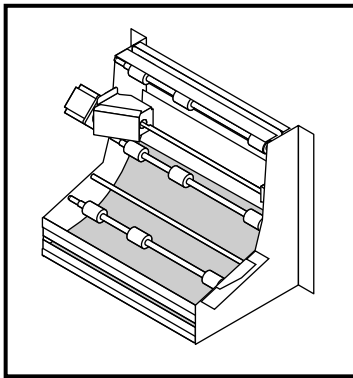


FR7H3124.EPS

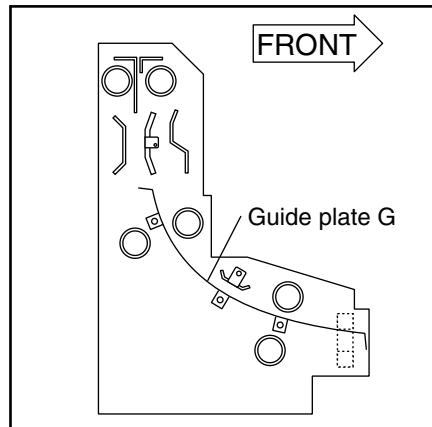
## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## 8.14 Guide Plate G



FR7H3059.EPS

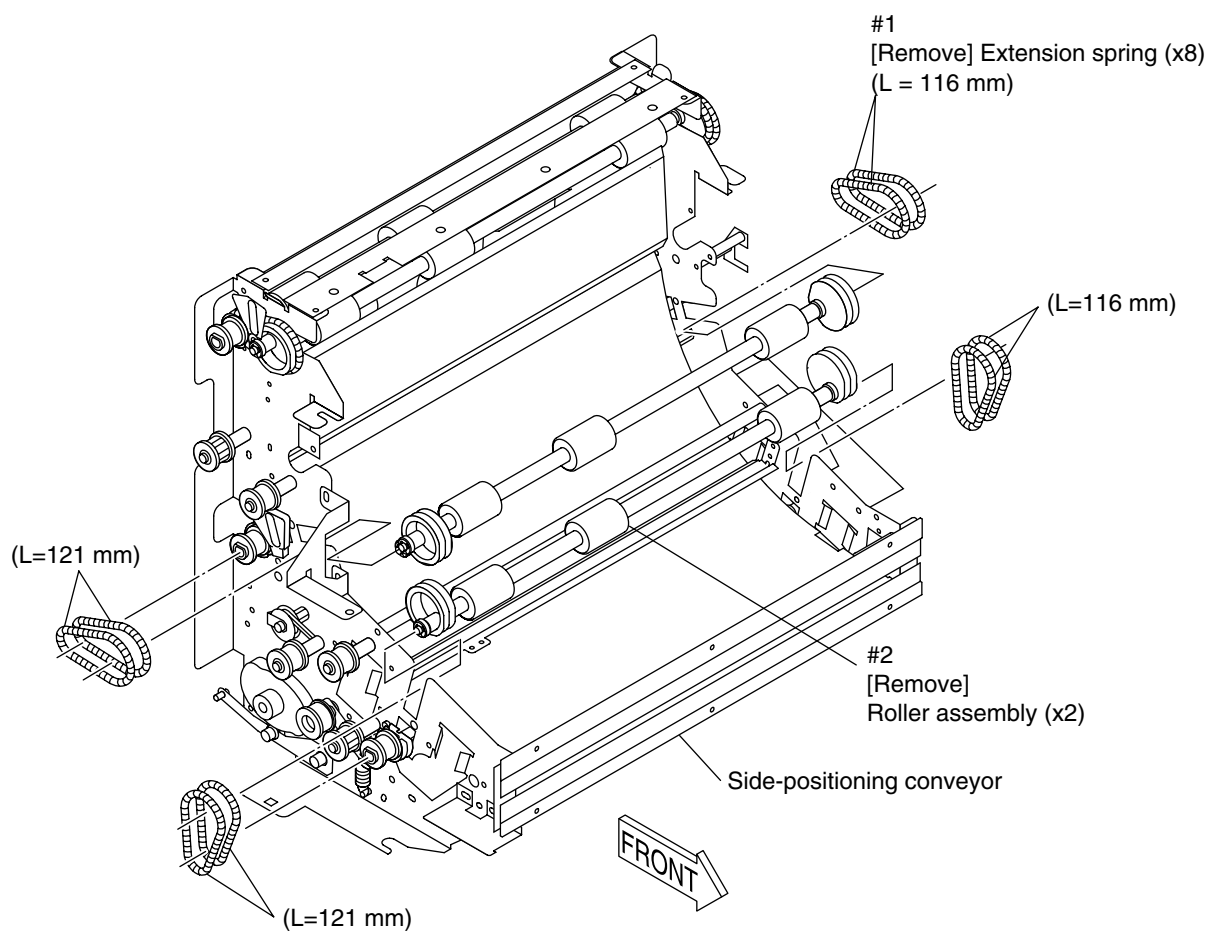


FR7H3183.EPS

### ■ Removal procedure

- (1) Remove the side-positioning conveyor.  
☞ “8.1 Side-Positioning Conveyor”
- (2) Remove the cleaning guide assembly.  
☞ “8.10 Cleaning Guide Assembly”
- (3) Remove the timing belt (for IP conveyance).  
☞ “8.13 Timing Belt (for IP Conveyance)”

(4) Remove the roller assemblies (front).

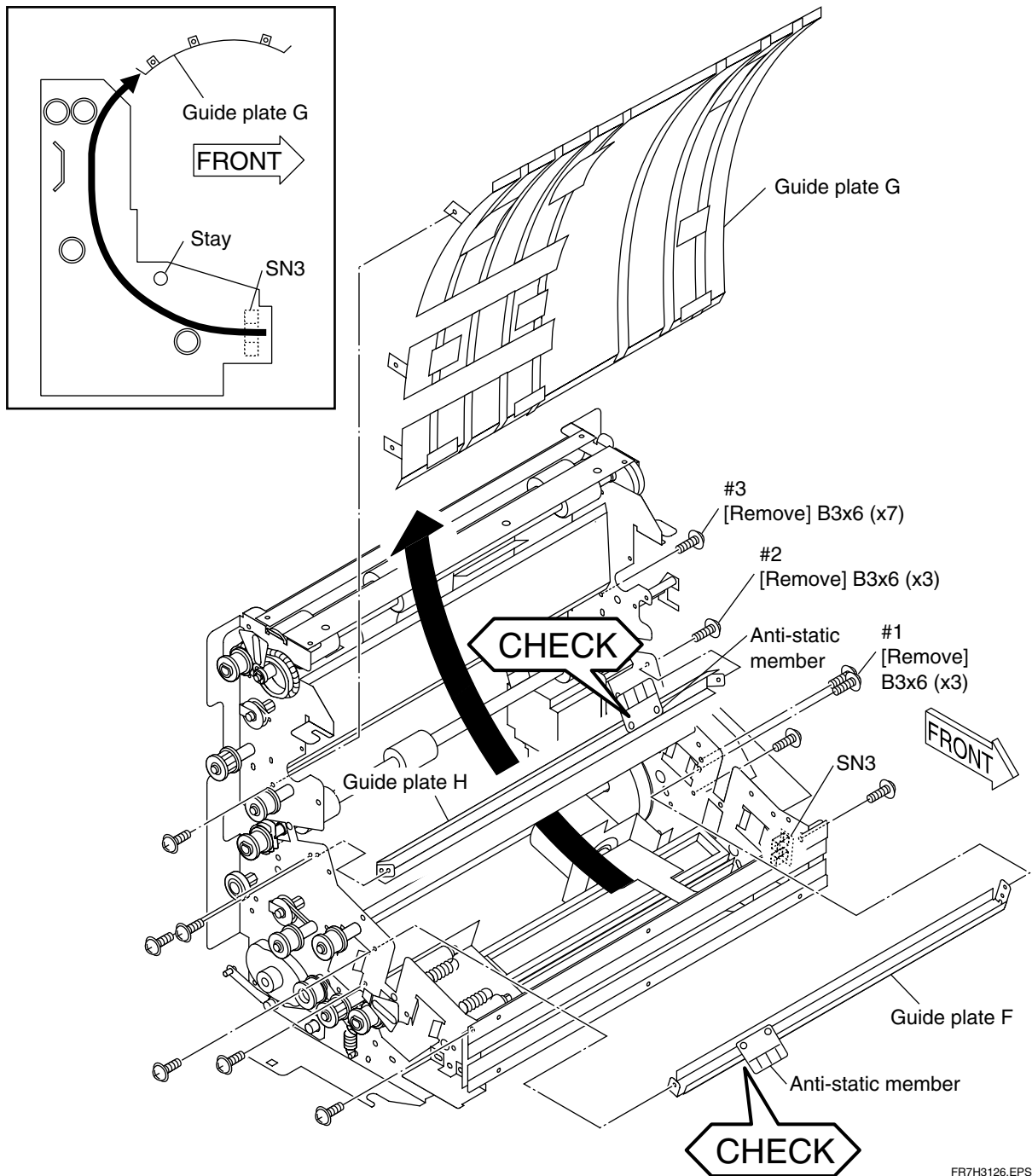


FR7H3125.EPS

◆ **NOTE** ◆

*When removing guide plate G, exercise care not to damage the SN3.*

(5) Remove guide plate G.



FR7H3126.EPS

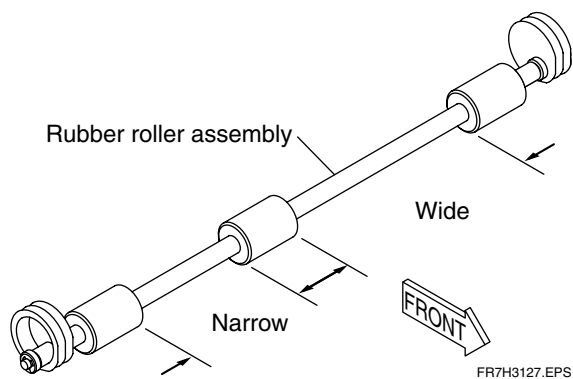
## ■ Installation procedure

### ◆ INSTRUCTION ◆

*The extension spring and rubber roller sizes vary with the mounting location. Pay due attention to the extension spring and rubber roller mounting locations.*

### ◆ NOTE ◆

*Ensure that the rubber roller assemblies are not installed with right and left reversed.*

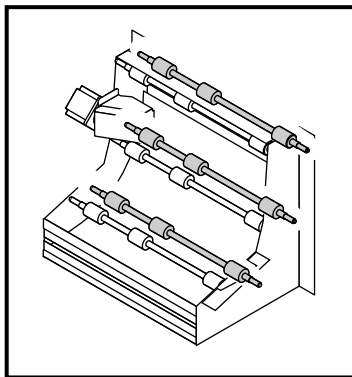


To accomplish installation, reverse the removal procedure.

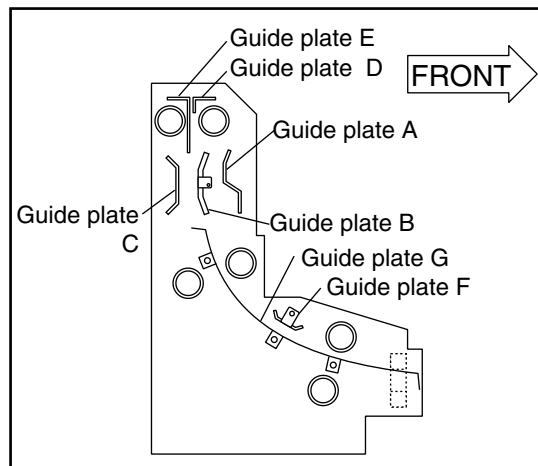
## ■ Check procedure

Make sure that the anti-static member is brought into contact with the roller.

## 8.15 Rubber Rollers (Rear)



FR7H3060.EPS



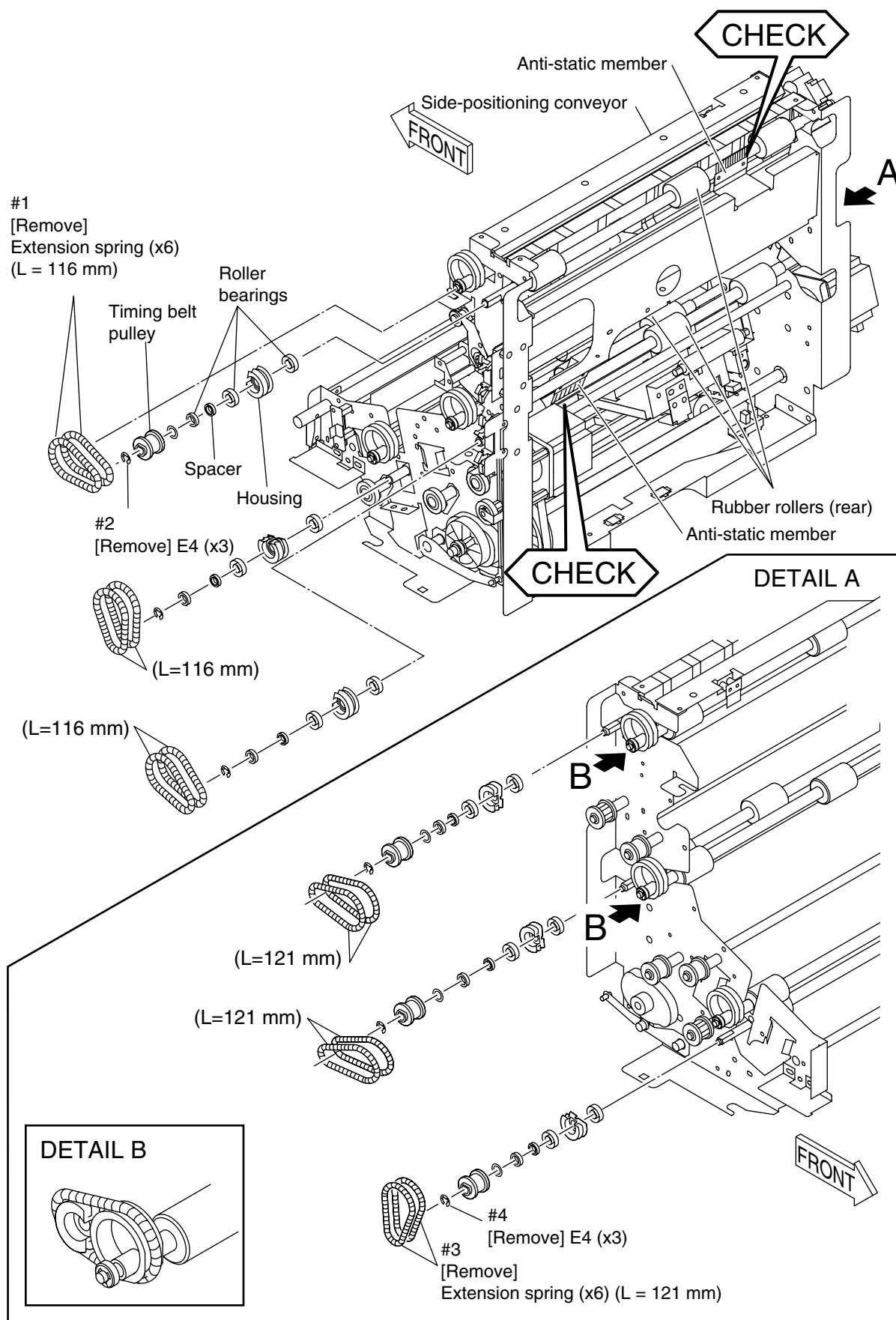
FR7H3184.EPS

### ■ Removal procedure

(1) Remove the timing belt (for IP conveyance).

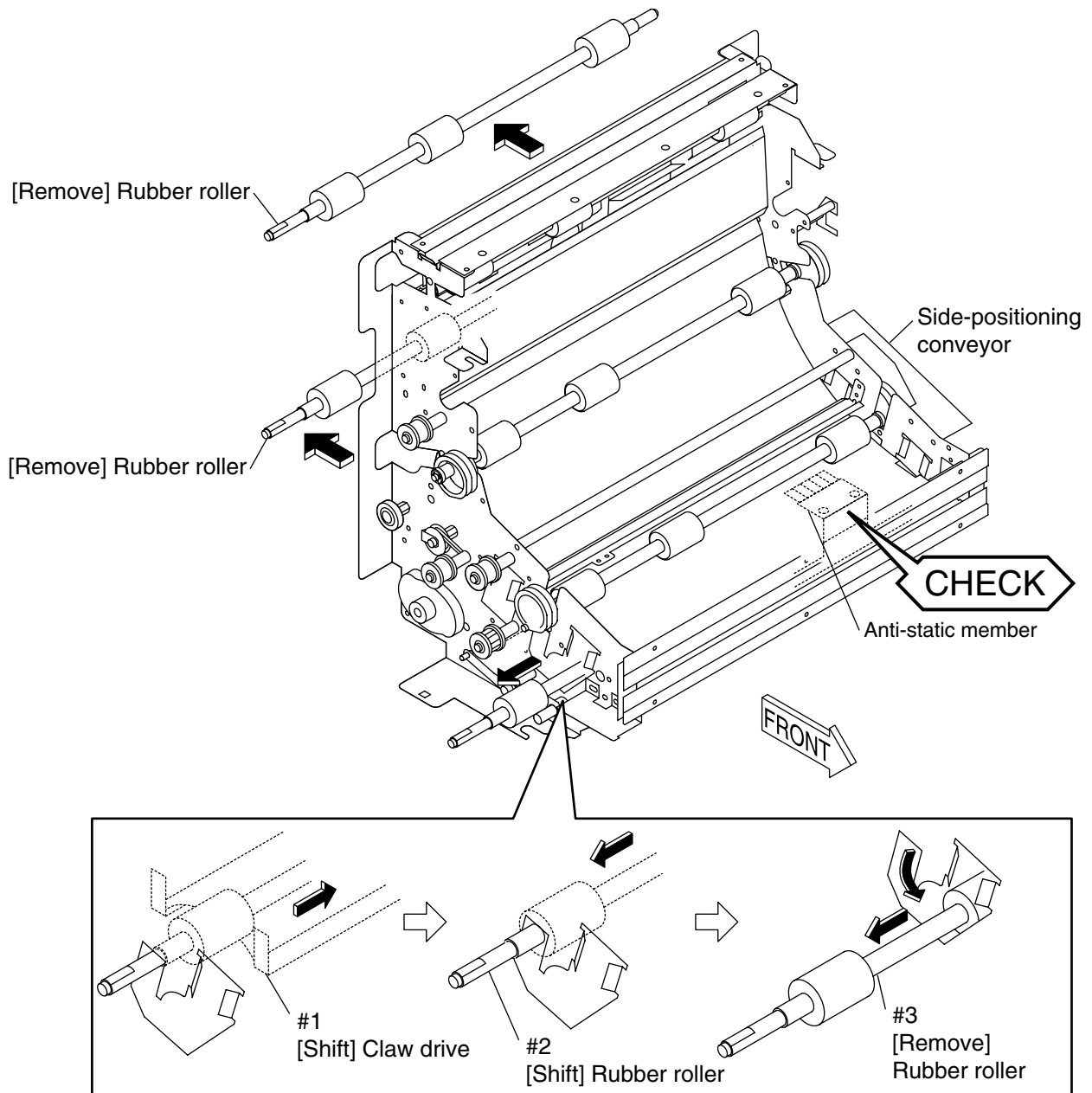
☞ “8.13 Timing Belt (for IP Conveyance)”

(2) Remove the rubber rollers (rear).



FR7H3128.EPS





FR7H3129.EPS

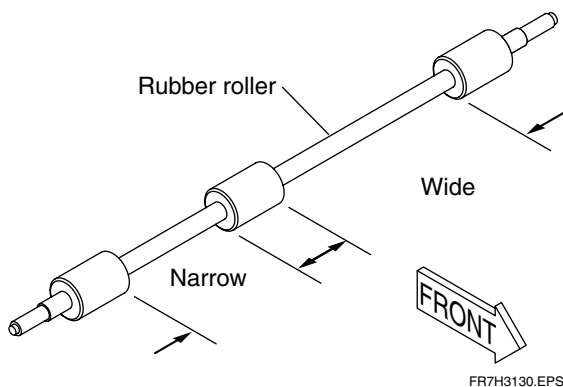
## ■ Installation procedure

### ◆ INSTRUCTION ◆

*The extension spring and rubber roller sizes vary with the mounting location. Pay due attention to the extension spring and rubber roller mounting locations.*

### ◆ NOTE ◆

*Ensure that the rubber rollers are not installed with right and left reversed.*

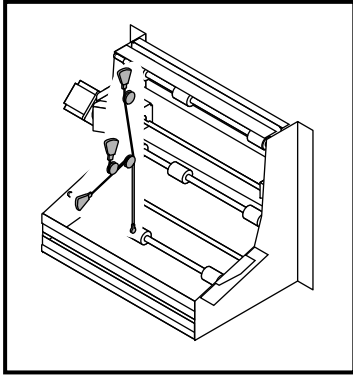


To accomplish installation, reverse the removal procedure.

## ■ Check procedure

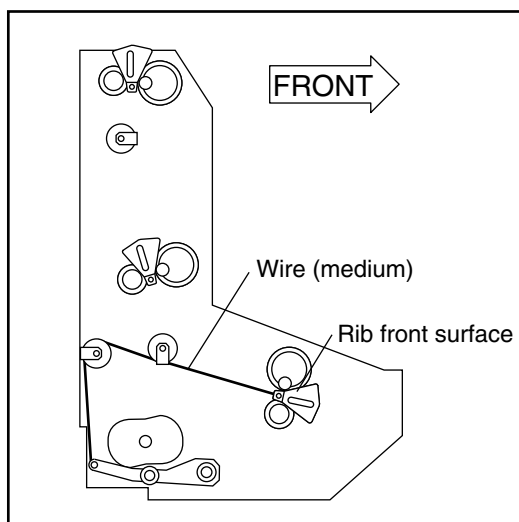
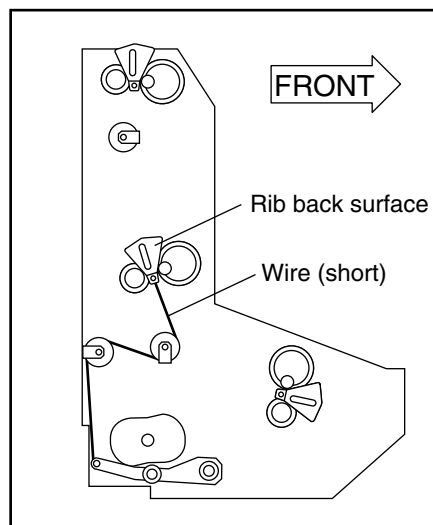
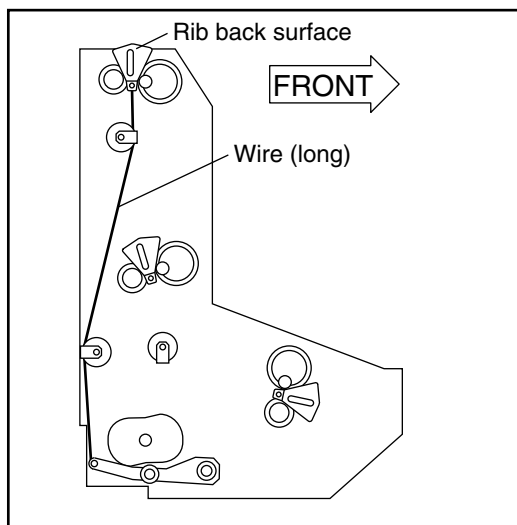
Make sure that the anti-static member is brought into contact with the roller.

## 8.16 Wires (Left Side)



FR7H3061.EPS

### ■ Wire locations



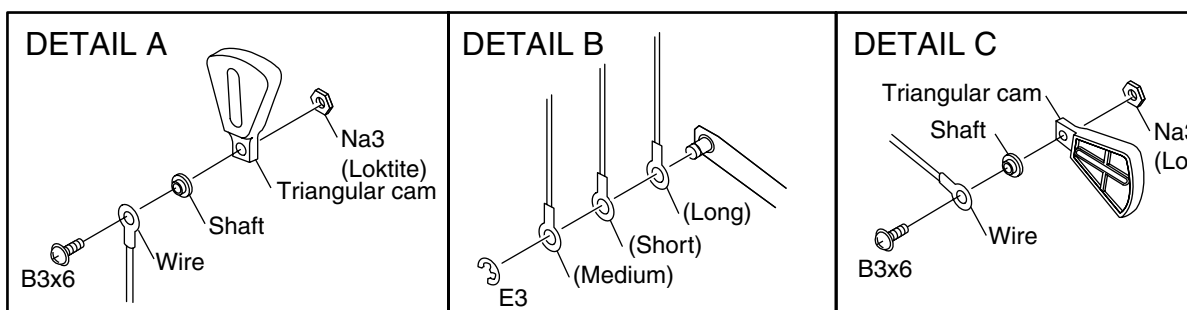
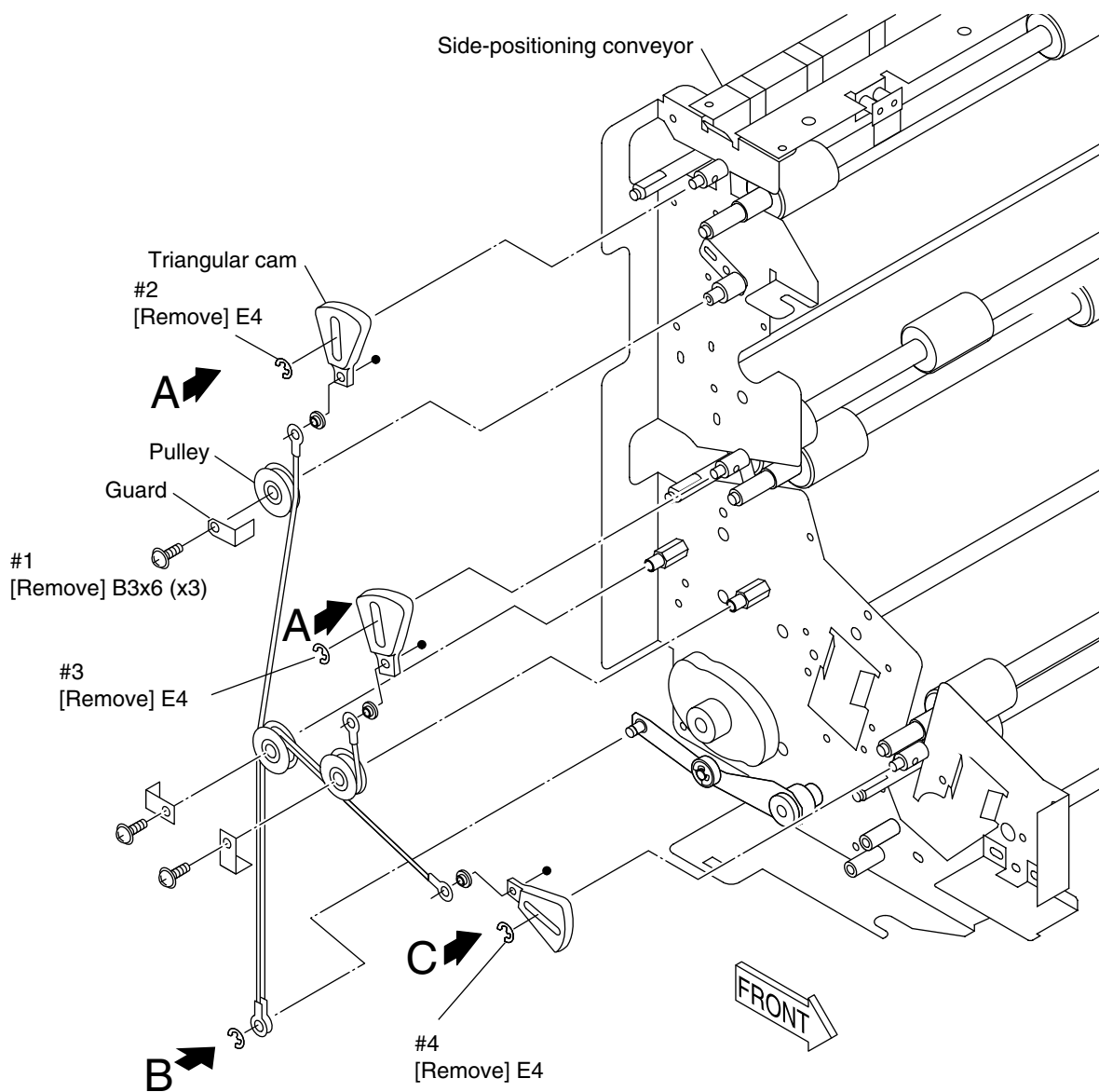
FR7H3131.EPS

## ■ Removal procedure

(1) Remove the timing belt (for IP conveyance).

☞ “5.4 Timing Belt (for IP Conveyance)”

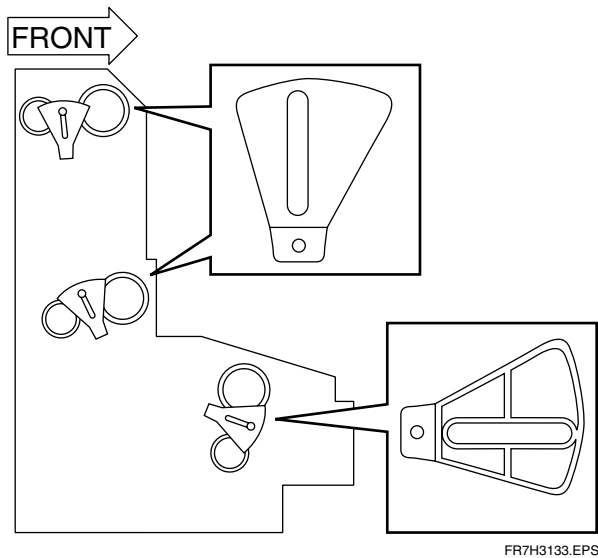
(2) Remove the wires (left side).



## ■ Installation procedure

### ◆ NOTE ◆

*Ensure that the triangular cams are properly oriented when they are installed over the shafts.*



To accomplish installation, reverse the removal procedure.

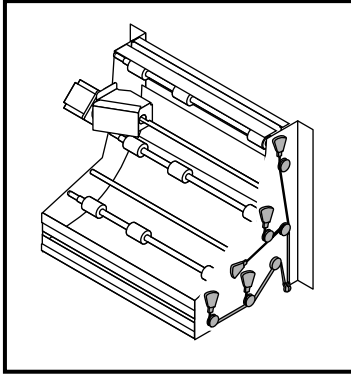
## ■ Check/adjustment procedure

After completion of wire (left side) installation, conduct the following checks:

- Check that the wires are properly threaded along their paths.
- Rotate the cams by hand to check for an improper grip mechanism operation (rubber roller grip/release operation).
- Check that the rubber rollers can be rotated while their grips are activated.

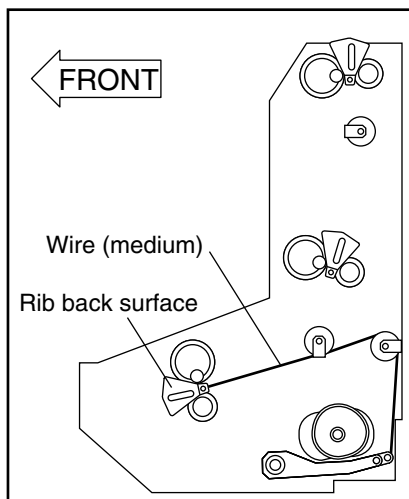
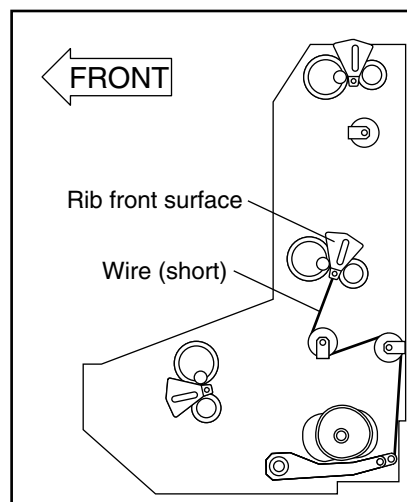
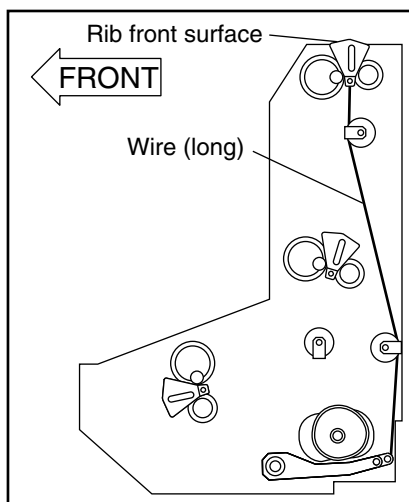
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## 8.17 Wires (Right Side)



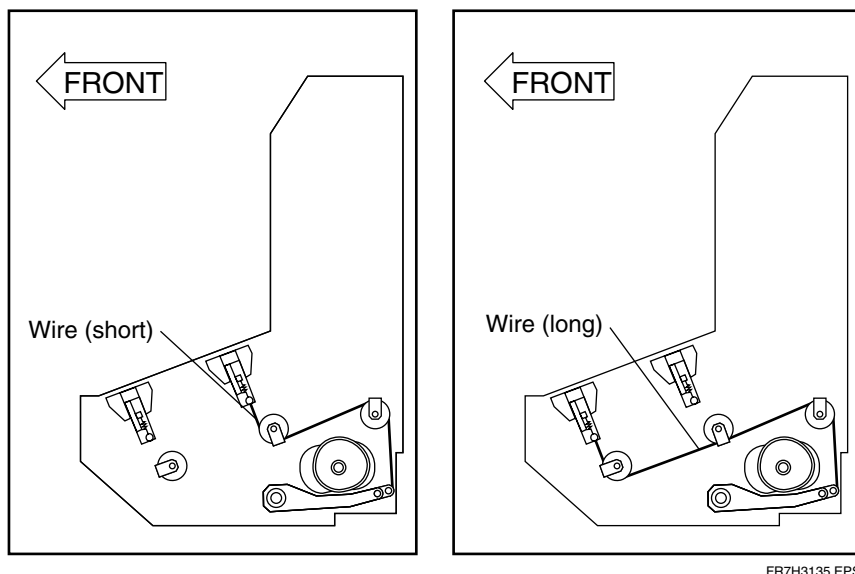
FR7H3062.EPS

### ■ Wire locations



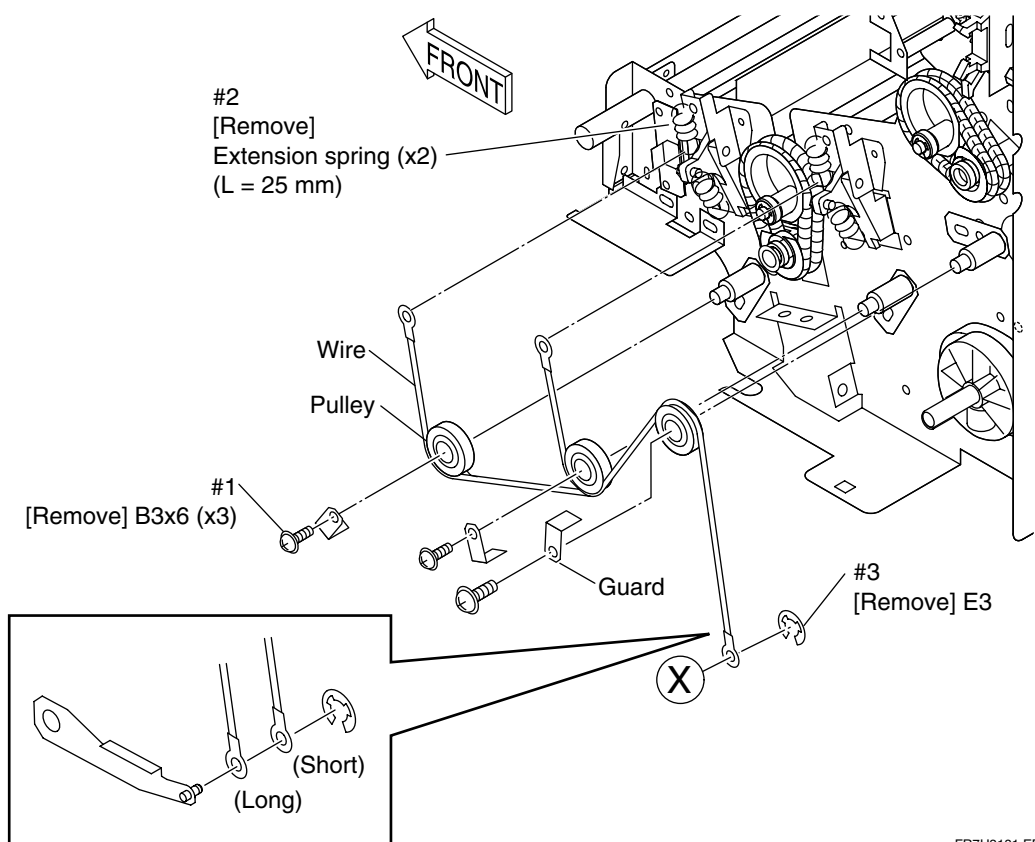
FR7H3134.EPS

## ● Side-positioning wires



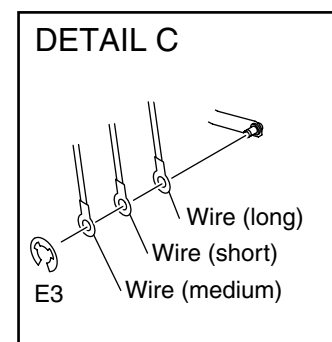
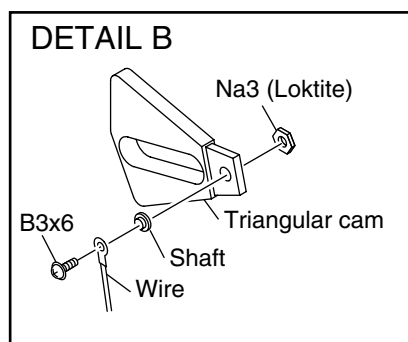
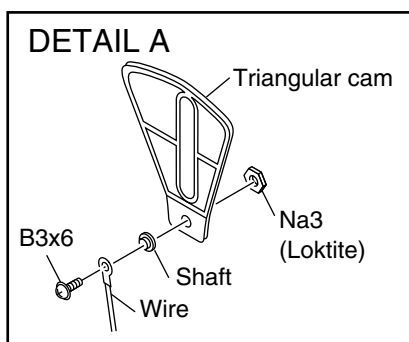
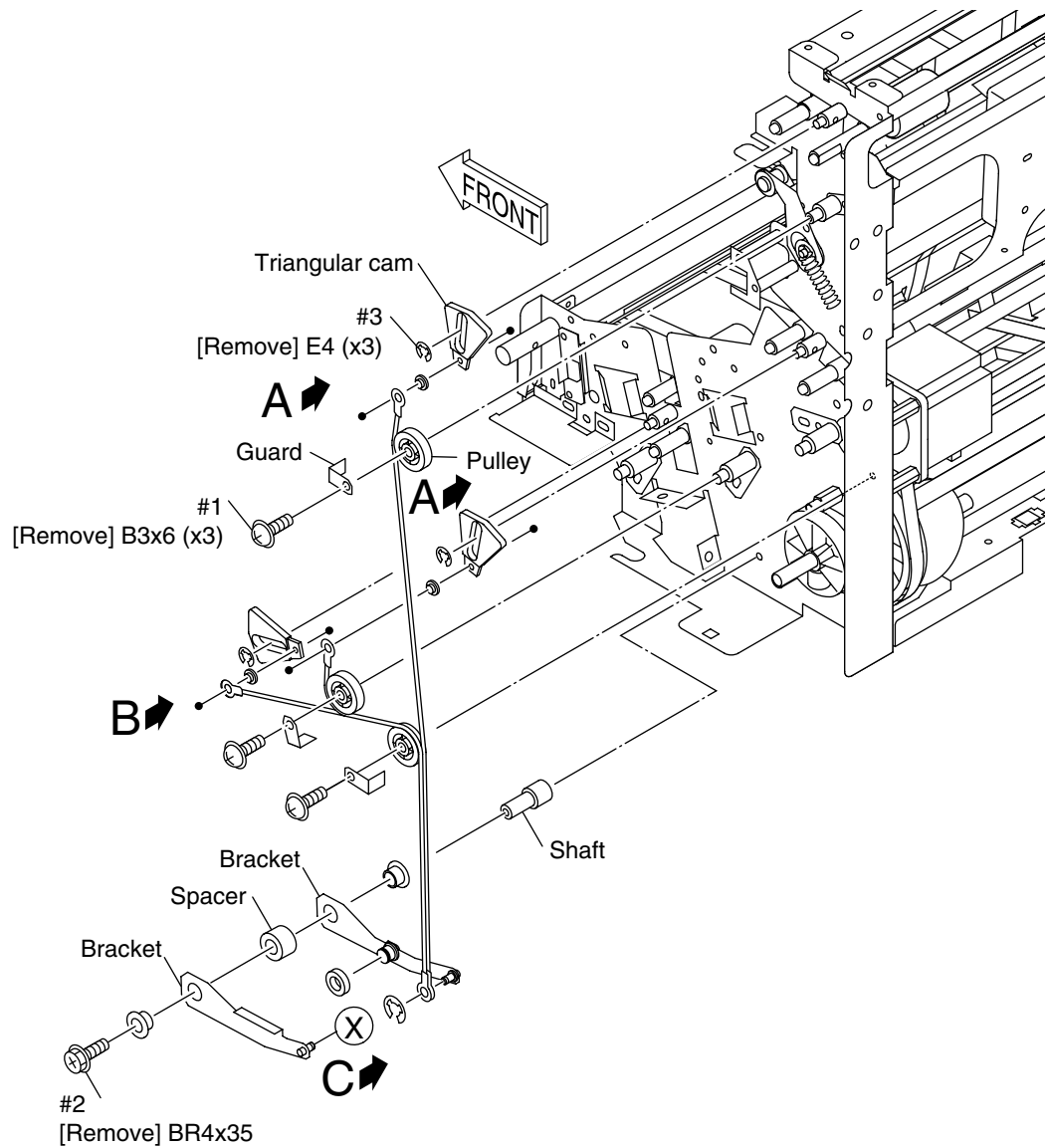
## ■ Removal procedure

- (1) Remove the side-positioning conveyor.  
 "8.1 Side-Positioning Conveyor"
- (2) Remove the side-positioning wires.





(3) Remove the grip release wires.

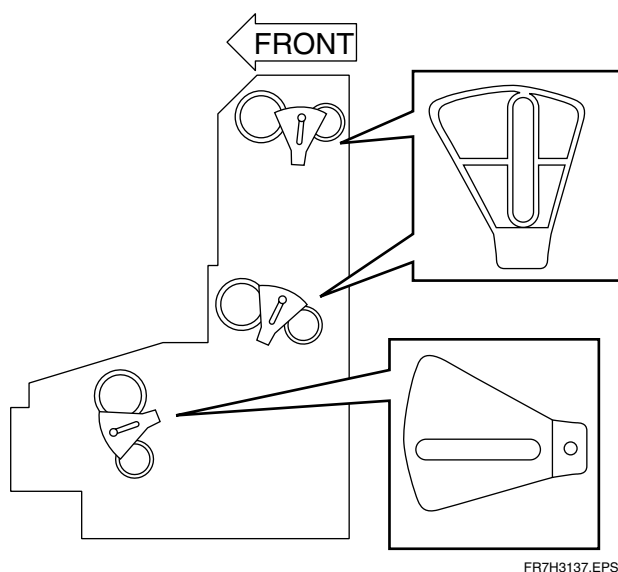


FR7H3136.EPS

## ■ Installation procedure

### ◆ NOTE ◆

*Ensure that the triangular cams are properly oriented when they are installed over the shafts.*



To accomplish installation, reverse the removal procedure.

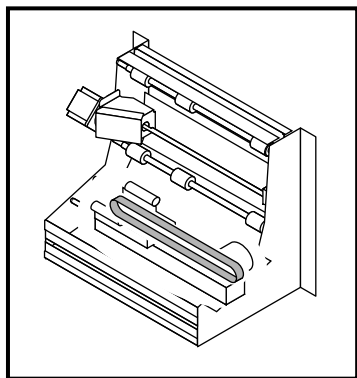
**■ Check/adjustment procedure**

After completion of wire (right side) installation, conduct the following checks:

- Check that the wires are properly threaded along their paths.
- Rotate the cams by hand to check for an improper grip mechanism operation (rubber roller grip/release operation).
- Check that the rubber rollers can be rotated while their grips are activated.


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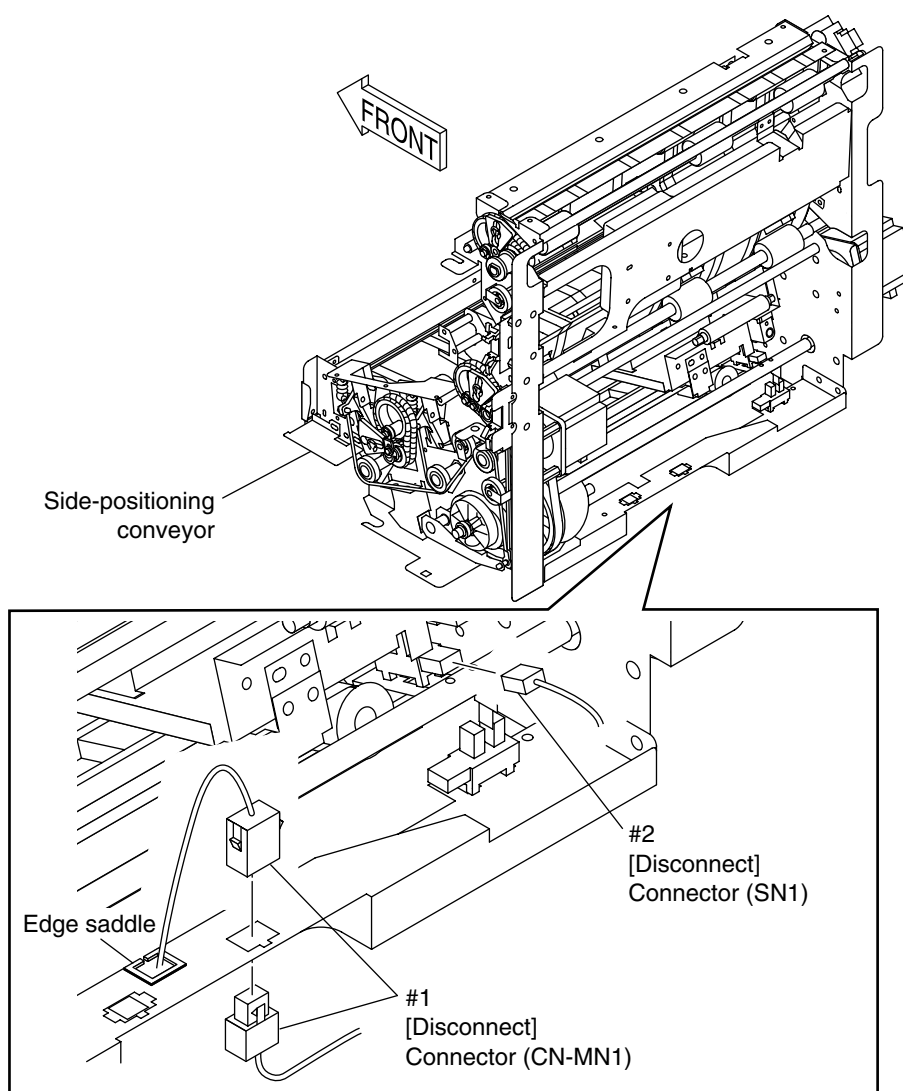
## 8.18 Timing Belt (for Side-Positioning Mechanism)



FR7H3063.EPS

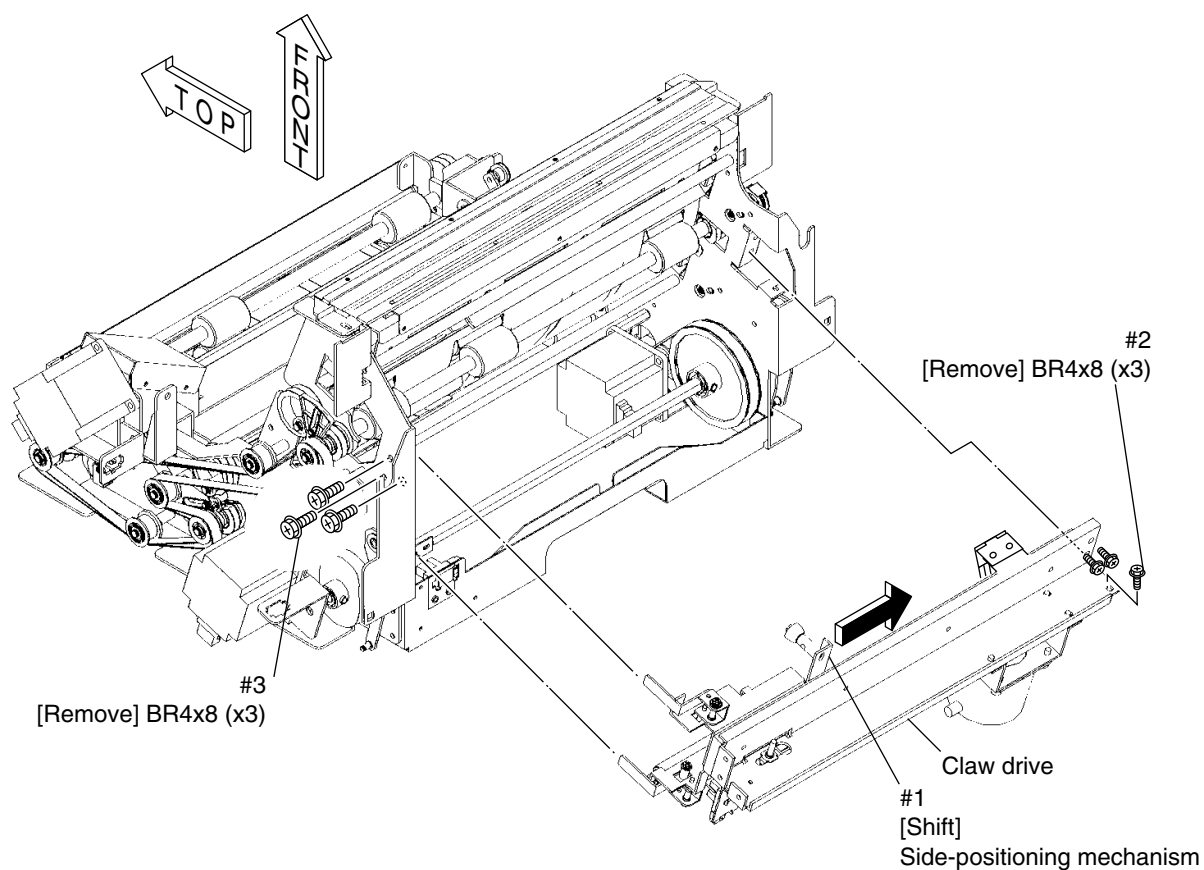
### ■ Removal procedure

- (1) Remove the side-positioning conveyor.  
 "8.1 Side-Positioning Conveyor"
- (2) Disconnect the connectors.



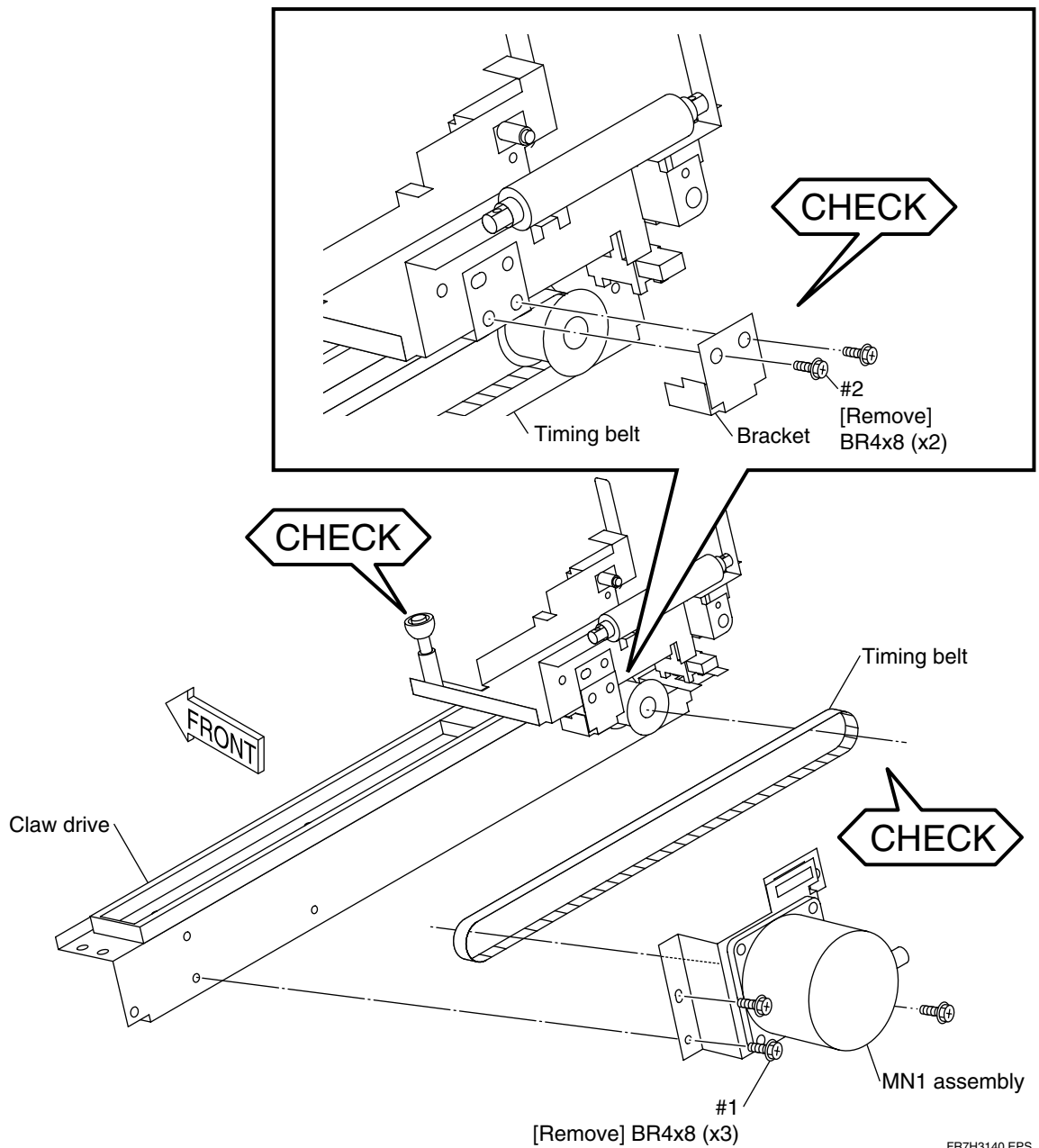
FR7H3138.EPS

(3) Remove the claw drive.



FR7H3139.EPS

(4) Remove the timing belt.



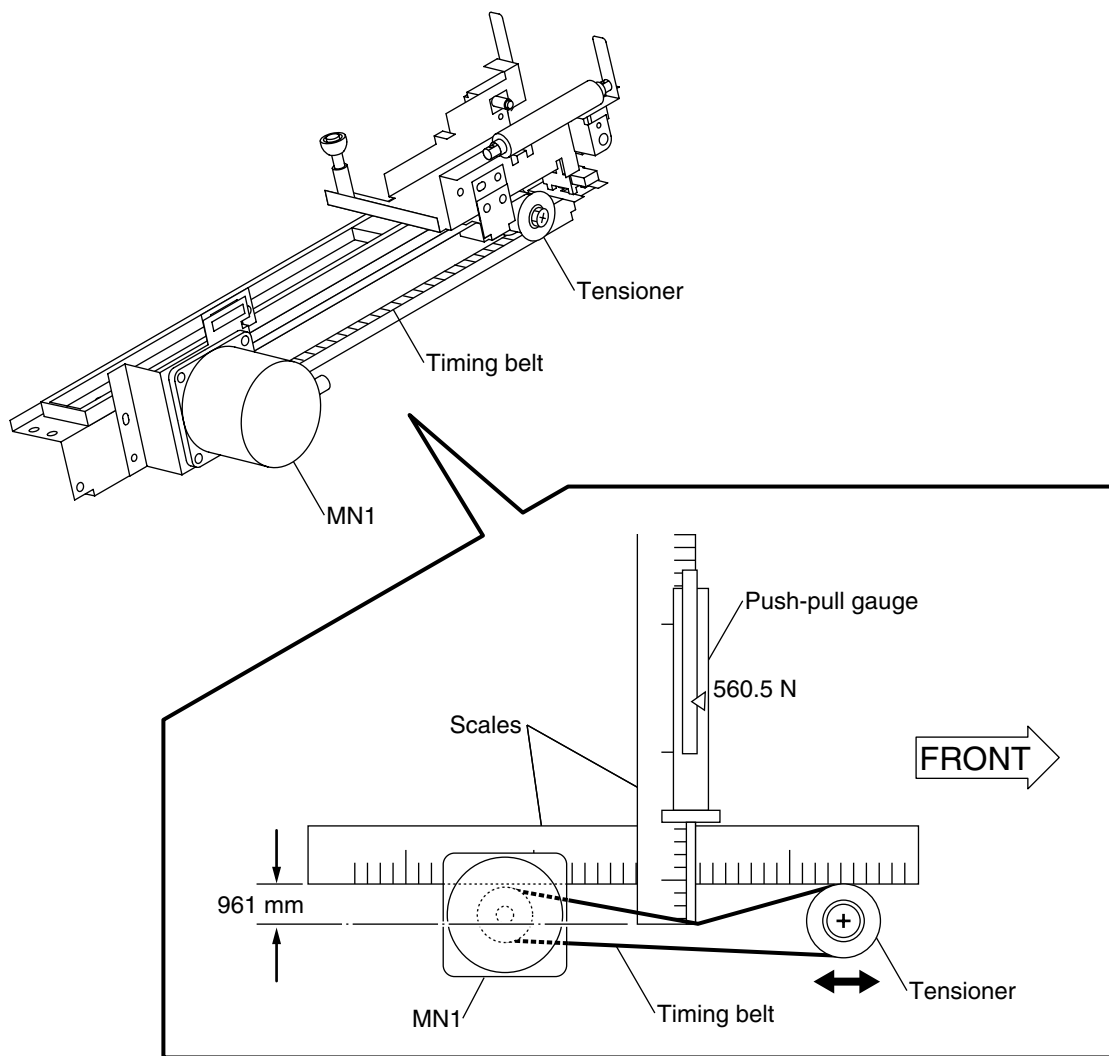
FR7H3140.EPS

## ■ Installation procedure

(1) Install the timing belt.

### ◆ INSTRUCTION ◆

*After timing belt replacement or tensioner loosening, properly adjust the timing belt tension.*

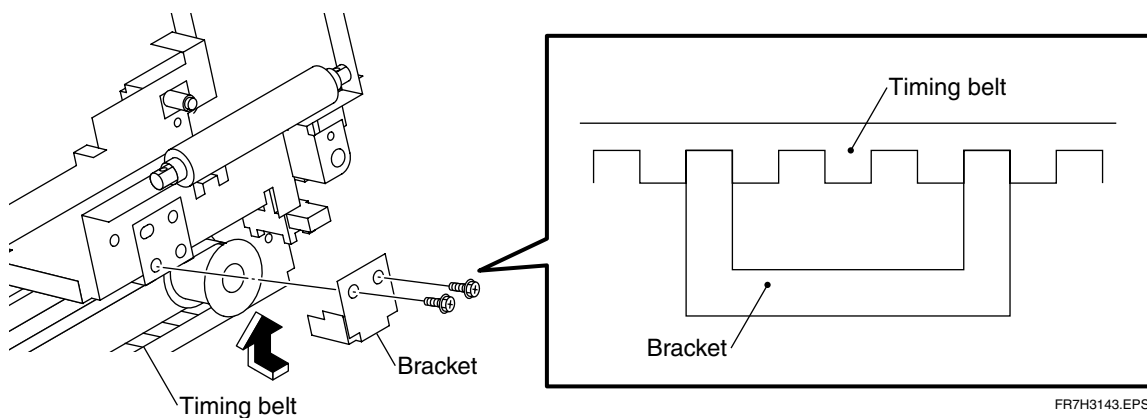


FR7H3142.EPS

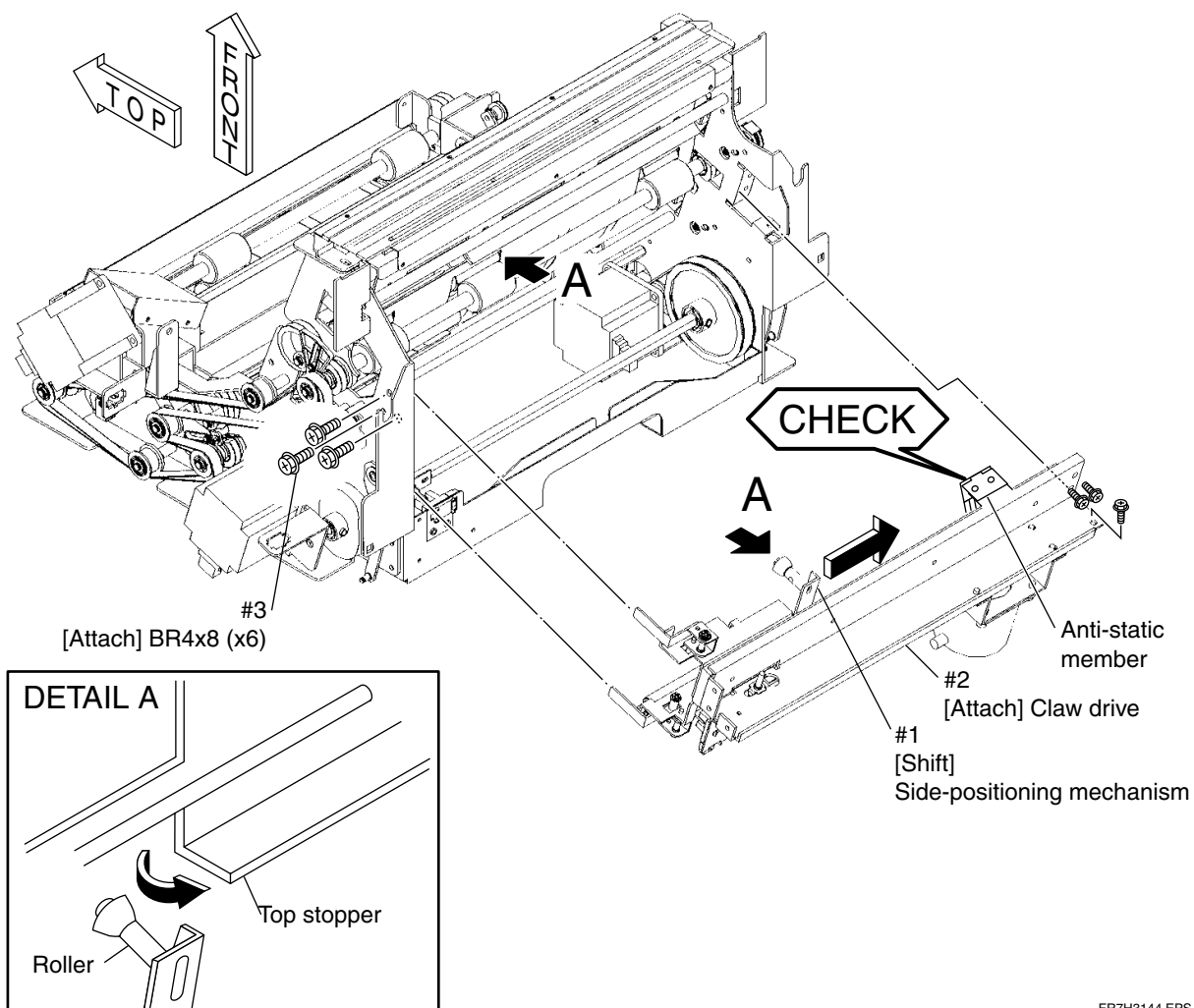


◆ **NOTE** ◆

Set the bracket by positioning it in the timing belt grooves.



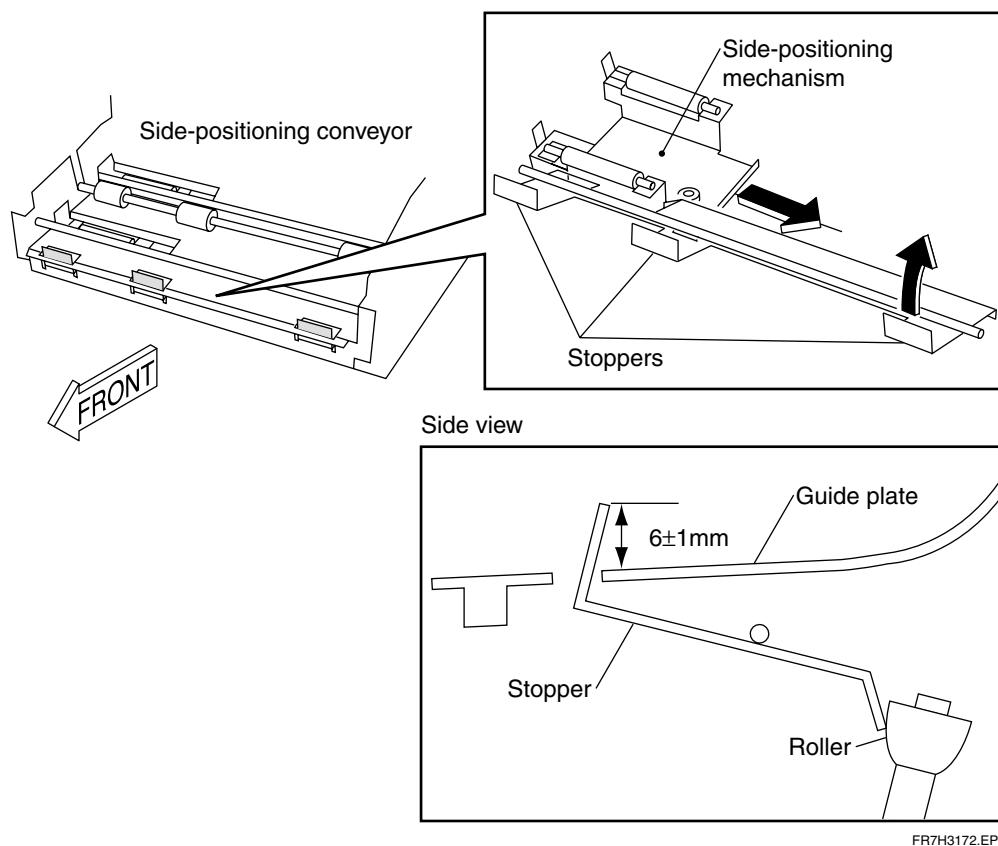
(2) Install the claw drive.



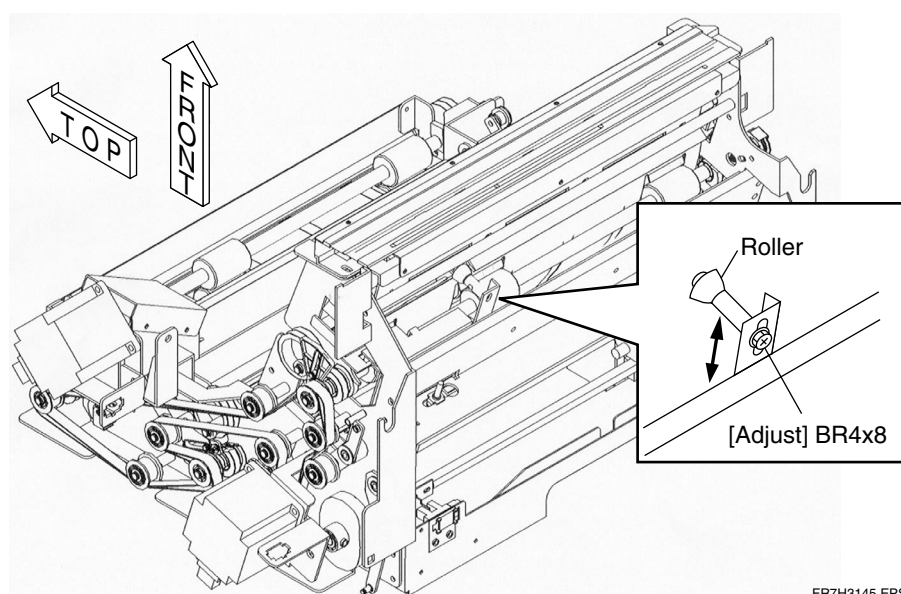
Complete installation by reversing the removal procedure.

## ■ Check/adjustment procedure

While the side-positioning conveyor is shifted rightward (toward the smaller size end), raise the stoppers to check that the distance between the guide plate and stopper ends is  $6\pm1$  mm.

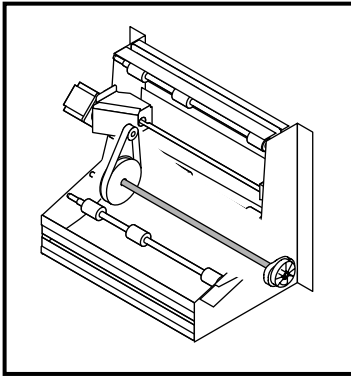


If the distance is not  $6\pm1$  mm, adjust the claw drive roller position and run the above check again.



- Make sure that the anti-static member is brought into contact with the roller.

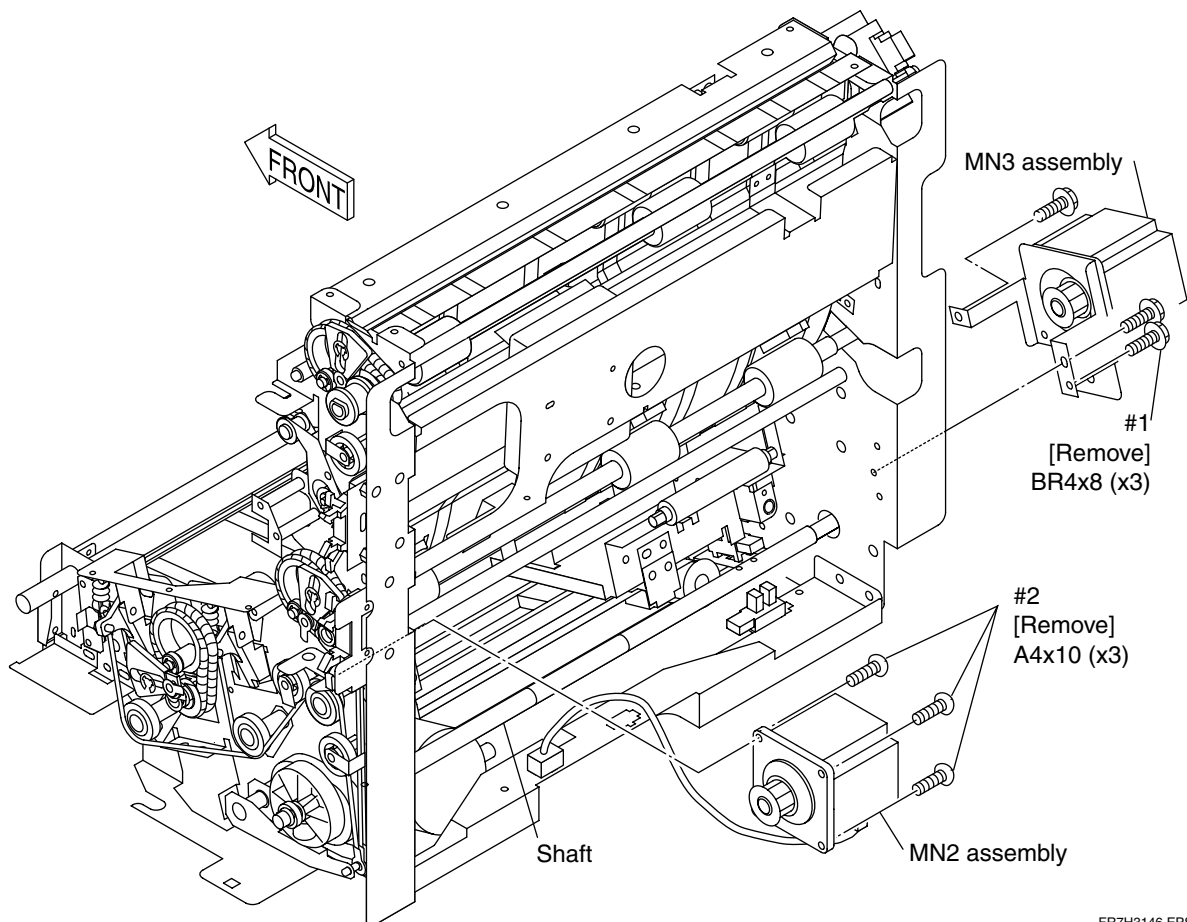
## 8.19 Shaft (for Grip Release)



FR7H3064.EPS

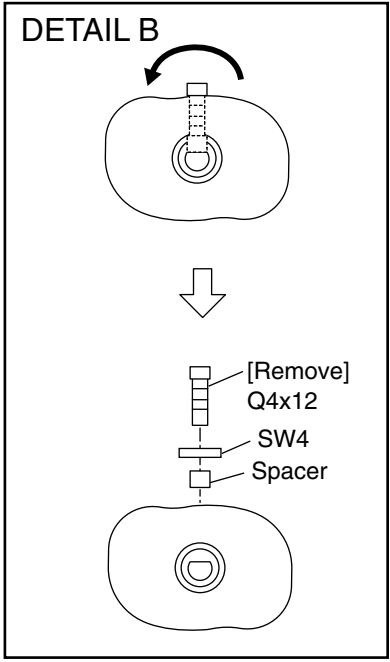
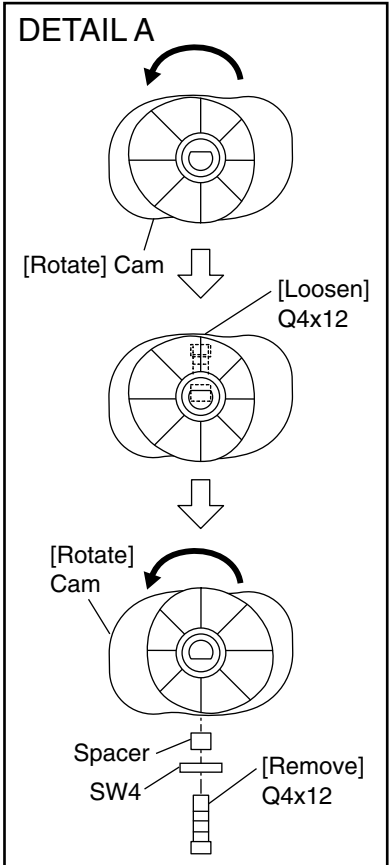
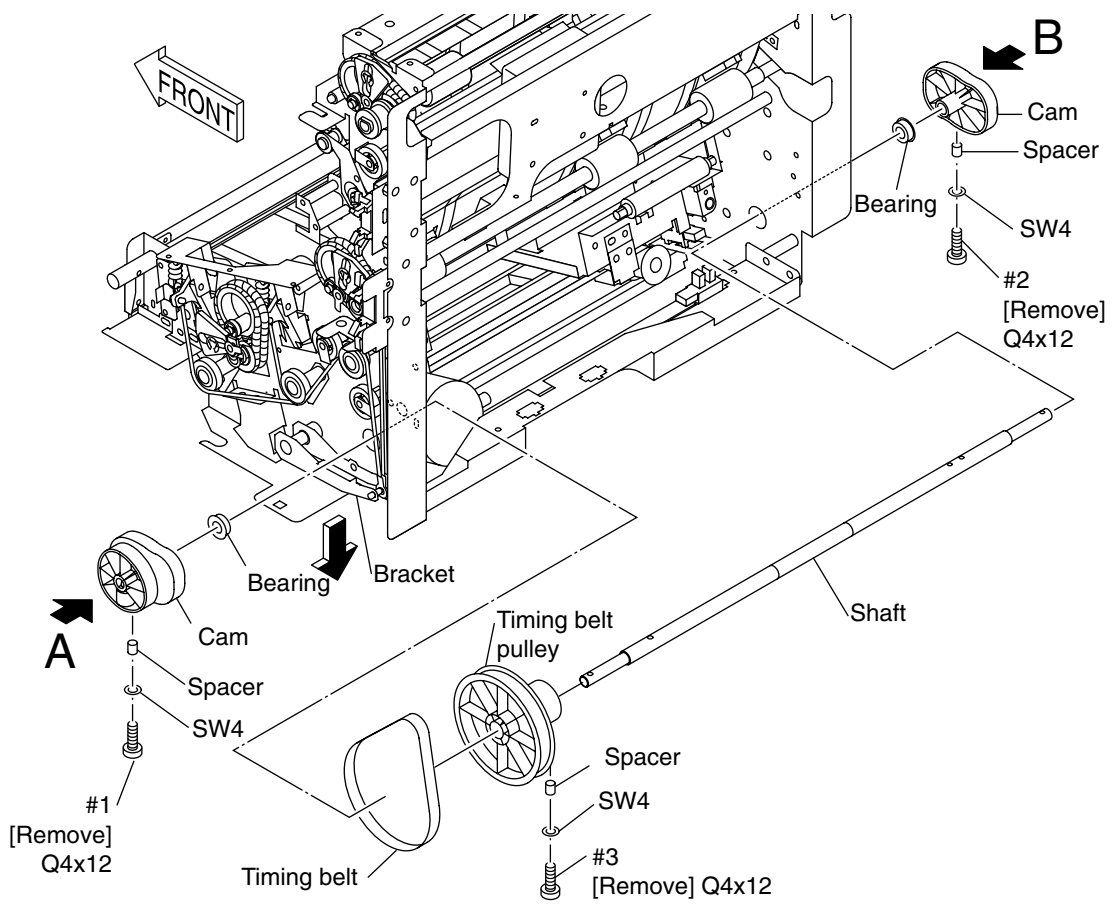
### ■ Removal procedure

- (1) Remove the side-positioning conveyor.  
     ☞ “8.1 Side-Positioning Conveyor”
- (2) Remove the MN2 and MN3 assemblies.



FR7H3146.EPS

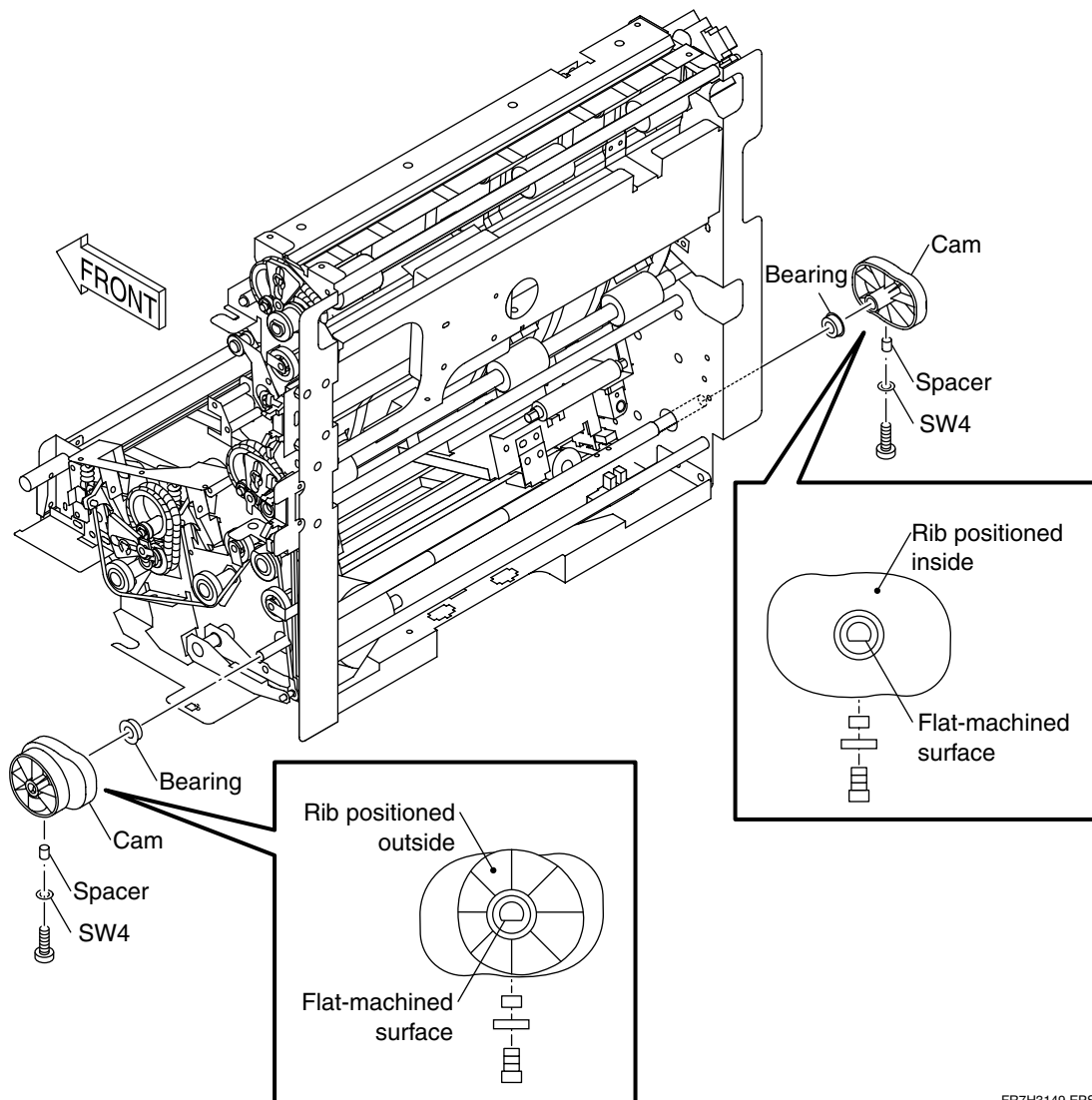
(3) Remove the shaft.



FR7H3147.EPS

**■ Installation procedure****◆ NOTES ◆**

- Ensure that the cam screw is attached to the flat-machined surface of the shaft.
- Make sure that the cam rib is not installed with right and left reversed.



FR7H3149.EPS

To accomplish installation, reverse the removal procedure.

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## 9. Removing and Installing the Scanning Optics Unit



### CAUTION

*When turning ON the power with a cover removed, ensure that the high-voltage switch is OFF. Removing a cover with the machine turned ON causes photomultiplier damage.*

### 9.1 Adjusting the Format

Adjust the format in the following sequence:

- [1] Verifying the image trimming amount
- [2] Initializing the format data
- [3] Entering the read width adjustment value
- [4] Entering the read start position adjustment value
- [5] Verifying the adjustment results

#### [1] Verifying the image trimming amount



### CAUTIONS

- Before adjusting the format, set the image trimming amount to 0.
- If the image trimming amount is changed, restore it to the previous setting after completion of format adjustment.

- (1) Start the M-Utility.
- (2) Choose "2. CONFIGURATION SETTING" and then "2. PRINT".
- (3) Make sure that the image trimming amount values (TH and TE) are set to 0.

```

TH=0
#13.Trimming(manmo)
#  0-25 (mm)

TE=0
#14.Trimming(others)
#  0-25 (mm)

```

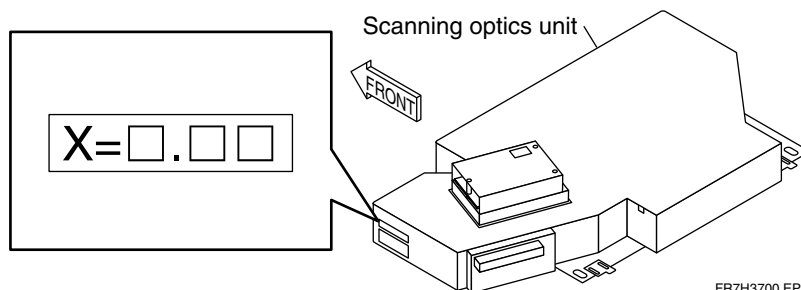
FR7H3740.EPS

#### [2] Initializing the format data

- (1) Start the M-Utility.
- (2) Choose "5. SCANNER UTILITY", "6. FORMAT", "1. DEFAULT", and then "1. PIXEL AND FREQ".

### [3] Entering the read width adjustment value

- (1) Start the M-Utility.
- (2) Choose "5. SCANNER UTILITY", "6. FORMAT", and then "2. FREQ ADJUST".
- (3) Note the read width adjustment value that is written on the side plate label of the new scanning optics unit. Type in this value and then press the [ENT] key.



FR7H3700.EPS

- (4) Choose "5. SCANNER UTILITY", "8. DATA MANAGEMENT", and then "3. SAVE FORMAT DATA".

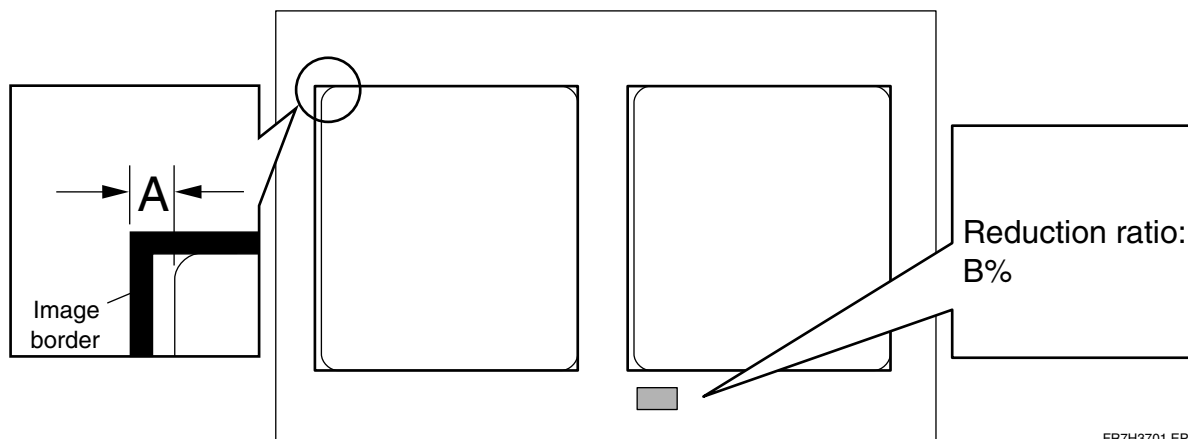
#### ◇ REFERENCE ◇

*After completion of format adjustment, back up the scanner data on a floppy disk.*

### [4] Entering the read start position adjustment value

- (1) Have on hand an IP of the maximum size that is employed at the user site. Expose this IP to 1 mR of radiation.
- (2) Using "Sensitivity" on the IDT's test menu, record and output an image.
- (3) Calculate the correction value.

Example) When a 14" x 17" 2-image output is generated



FR7H3701.EPS

$$\text{Correction value} = A \times 100 / B \times 10 + 10$$

- (4) Start the M-Utility.
- (5) Choose "5. SCANNER UTILITY", "6. FORMAT", and then "2. PIXEL ADJUST".
- (6) Enter the correction value that was calculated in Step (3).
- (7) Choose "5. SCANNER UTILITY", "8. DATA MANAGEMENT", and then "3. SAVE FORMAT DATA".

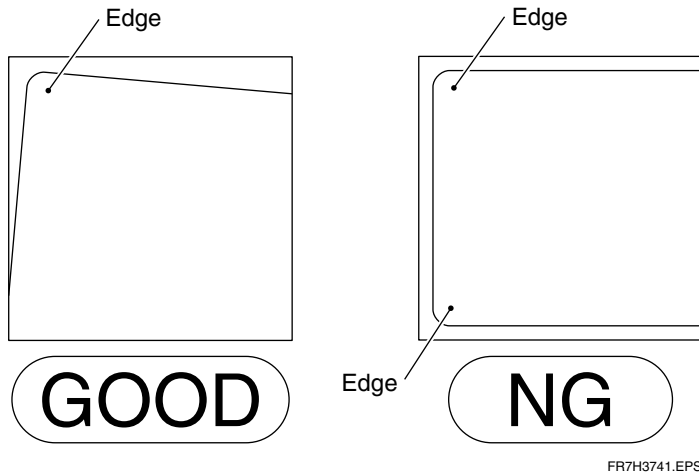
#### ◇ REFERENCE ◇

*After completion of format adjustment, back up the scanner data on a floppy disk.*



**[5] Verifying the adjustment results**

- (1) Have on hand IPs of all sizes that are employed at the user site. Expose these IPs to 1 mR of radiation.
- (2) Using “Sensitivity” on the IDT’s test menu, record and output images.
- (3) Note the generated film outputs to verify that either the top edge or the bottom edge of each IP is invisible.



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## 9.2 Shading and Sensitivity Corrections

Make shading and sensitivity corrections in the following sequence:

- [1] Shading correction data recording initial setup
- [2] IP exposure/dosage measurement
- [3] IP conveyance
- [4] Shading and sensitivity corrections
- [5] Correction result verification

◆ **NOTE** ◆

---

*Shading and sensitivity corrections must be made for both ST and HR.*

---

### [1] Shading correction data recording initial setup

- (1) Start the M-Utility.
- (2) Make preparations so that shading correction data can be recorded.
  - ST
    - 5. SCANNER UTILITY, 7. SHADING/SENSITIVITY, 1. REC MODE, 1. ST
  - HR
    - 5. SCANNER UTILITY, 7. SHADING/SENSITIVITY, 1. REC MODE, 2. HR
- (3) Exit the M-Utility.

**[2] IP exposure/dose measurement****◇ SUPPLEMENTARY NOTE ◇**

*Measure the dose at the center of the IP sensitivity calculation area and its outside beforehand to calculate the ratio between them, and then determine the correction dose value according to the calculated ratio.*

- (1) While exposing the IP with the center of the X-ray exposure aligned to the center of the IP sensitivity calculation area, measure the dose with a dosimeter.

## ○ ST

IP used:

14" x 17" (14" x 14" may also be used if 14" x 17" is not available.)

X-ray tube target:

Tungsten

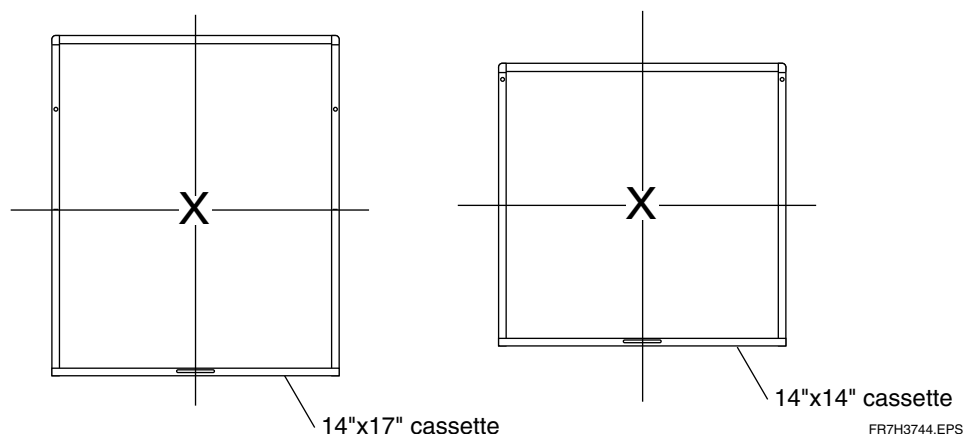
Tube voltage:

80 kV

Dose:

1 mR

Center of sensitivity calculation area: Location denoted by "X" in the illustration below. (Center of cassette)



## ○ HR

IP used:

IP used: 24cm x 30cm mammo (18cm x 24cm mammo may also be used if 24cm x 30cm mammo is not available.)

X-ray tube target/filter:

Molybdenum/molybdenum

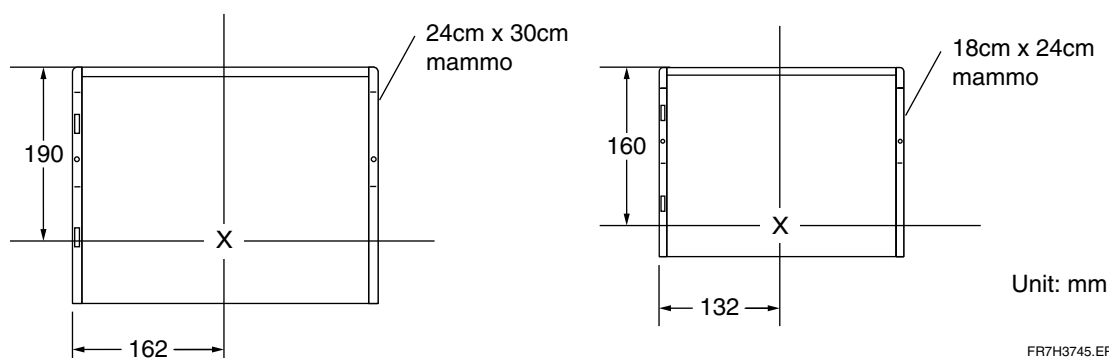
Tube voltage:

25 kV

Dose:

20 mR

Center of sensitivity calculation area: Location denoted by "X" in the illustration below.



- (2) Determine the correction dose value by rounding the dosimeter reading (in mR) to two decimal places.

**[3] IP conveyance**

When 10 minutes elapse after IP exposure, convey the IP in the primary erasure mode.

**[4] Shading and sensitivity corrections**

- (1) Start the M-Utility.
- (2) Make shading/sensitivity corrections.
  - ST
    5. SCANNER UTILITY, 7. SHADING/SENSITIVITY, 2. CALCULATION, 1. ST
  - HR
    5. SCANNER UTILITY, 7. SHADING/SENSITIVITY, 2. CALCULATION, 2. HR
- (3) Select either of the ST/HR menu items (1, 3, 5, or 6). Menu items (2 and 4) should not be used.
  - Making shading and sensitivity corrections
    1. SHADING, POLYGON AND SENSITIVITY
  - Making shading corrections without providing sensitivity corrections
    3. SHADING AND POLYGON
  - Making polygon corrections only
    5. POLYGON ONLY
  - Making sensitivity corrections only
    6. SENSITIVITY ONLY
- (4) If menu item 1 or 6 was selected, enter the corrected dose value. When any other menu item was selected, skip to the next step.
- (5) Choose “5. SCANNER UTILITY”, “8. DATA MANAGEMENT”, and then “1. SAVE SHADING AND POLYGON DATA”.

**◇ REFERENCE ◇**

---

*After completion of shading/sensitivity corrections, back up the scanner data on a floppy disk.*

---

**[5] Correction result verification**

(1) Expose the IP.

○ ST

IP used: 14" x 17" (14" x 14" may also be used if 14" x 17" is not available.)

X-ray tube target: Tungsten

Tube voltage: 80 kV

Dose: 1 mR

○ HR

IP used: IP used: 24cm x 30cm mammo (18cm x 24cm mammo may also be used if 24cm x 30cm mammo is not available.)

X-ray tube target/filter: Molybdenum/molybdenum

Tube voltage: 25 kV

Dose: 20 mR

(2) Using the test menu, record and output an image.

○ ST

“感度” (for Japanese version)/“SENSITIVITY” (for versions other than Japanese)

○ HR

“感度 -1” (for Japanese version)/“SensitivityHQ” (for U.S. version)/  
“SENSITIVITY2” (for versions other than Japanese and U.S.)

◆ **NOTE** ◆

---

*Generate an image output when 10 minutes elapse after IP exposure.*

---

(3) Run the following checks on the obtained output film:

○ Check for image irregularities.

○ Check that the S value prevailing on the film is within the following range:

<ST>

$$140 \leq S \text{ value} \leq 260$$

<HR>

$$84 \leq S \text{ value} \leq 156$$

(4) Terminate the shading correction/sensitivity correction process.

## 9.3 Checking for Image Problems

### ■ Check for Nonuniformity, Sensitivity, and Density

- (1) Expose two IPs of all sizes found at the institution (both ST and HR types). Expose the first in the normal direction, and the second in a 180-degree rotated orientation.

The IP exposure conditions are as follows.

○ ST

- Dose: 1 mR
- X-ray tube target : Tungsten
- Distance: 1.8 m
- Voltage: 80 kV
- Current: 50 mA
- Time: 0.013 sec

○ HR

- Dose: 20 mR
- X-ray tube target/filter: Molybdenum/molybdenum
- Distance: 0.55 m
- Voltage: 28 kV
- Current: 100 mA
- Time: 0.053 sec

- (2) Using the test menu, record and output an image.

○ ST

“感度” (for Japanese version)/“SENSITIVITY” (for versions other than Japanese)

○ HR

“感度 -1” (for Japanese version)/“SensitivityHQ” (for U.S. version)/“SENSITIVITY2” (for versions other than Japanese and U.S.)

- (3) Check to ensure that there is no nonuniformity on the output film or the image on the image monitor .

### ◆ CHECK ◆

*Check for nonuniformity.*

*If any nonuniformity is found, refer to “10. Troubleshooting Procedures Based on Abnormal Image” in the “Troubleshooting” volume.*

(4) Using the output film, check the sensitivity.

◆ **CHECK** ◆

*Make sure that the S value on the film is held within the following range.*

*ST:  $140 \leq S \text{ value} \leq 260$*

*HR:  $84 \leq S \text{ value} \leq 156$*

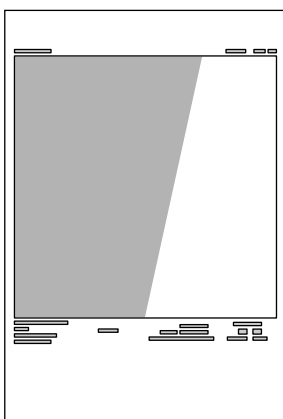
(5) Make sure that there is no density unbalance in the image of the output film.

◆ **CHECK** ◆

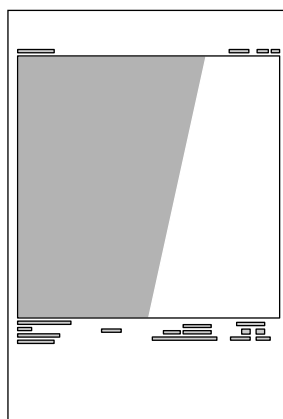
*Make sure that there is no density unbalance in the main scan direction.*

*If any density unbalance is found, compare the films outputted from two IPs of the same size to isolate its probable cause.*

- *If the density unbalance positions in the main scan direction are the same*  
 ⇨ *The culprit is an improper mounting of the light-collecting guide assembly.*



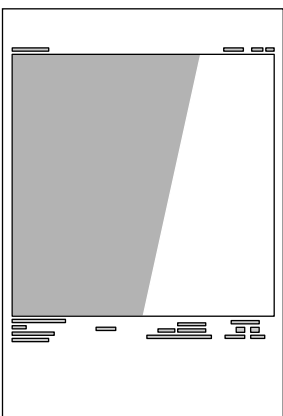
IP in normal orientation (first)



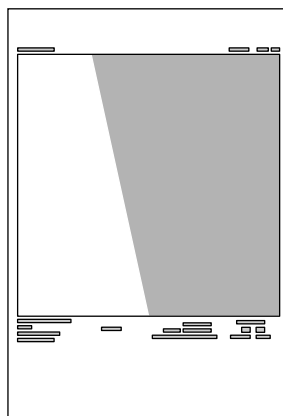
IP in 180-degree rotated orientation (second)

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- *If the density unbalance positions in the main scan direction are different*  
 ⇨ *The exposure-related component(s) may be a probable cause.*



IP in normal orientation (first)



IP in 180-degree rotated orientation (second)

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## ■ Check for Jitter and HR

- (1) Place steel rules and a washer on IPs of all sizes found at the institution, and expose them. (Both ST and HR types. For the layout, see the illustration below.)

The IP exposure conditions are as follows.

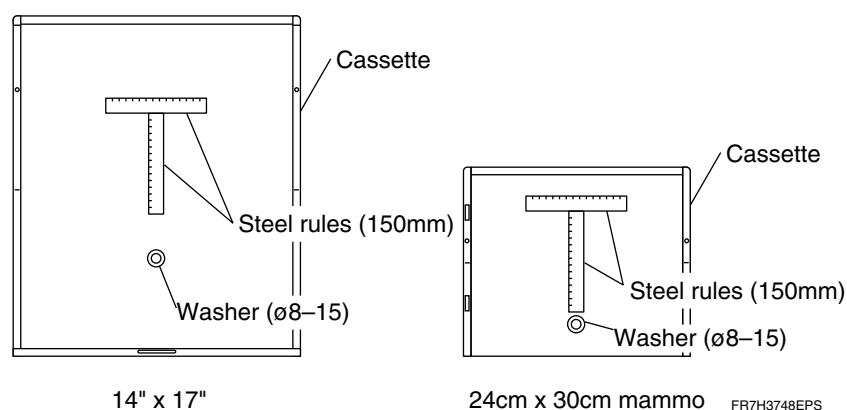
### ○ ST

- Dose: 1 mR
- X-ray tube target : Tungsten
- Distance: 1.8 m
- Voltage: 80 kV
- Current: 50 mA
- Time: 0.013 sec

### ○ HR

- Dose: 20 mR
- X-ray tube target/filter: Molybdenum/molybdenum
- Distance: 0.55 m
- Voltage: 28 kV
- Current: 100 mA
- Time: 0.053 sec

The layout of the steel rules and washer is shown below.



- (2) Using the test menu, record and output an image.

○ ST

“画像フォーマット” (for Japanese version)/“IMAGE FORMAT” (for versions other than Japanese)

○ HR

“画像フォーマット-2” (for Japanese version)/“BREAST, L (DSR)” or “BREAST, R (DSR)” (for U.S. version)/“IMAGE FORMAT2” (for European version)

- (3) Make sure that there is no jitter in the image of the border and steel rules on the output film.

#### ◆ CHECK ◆

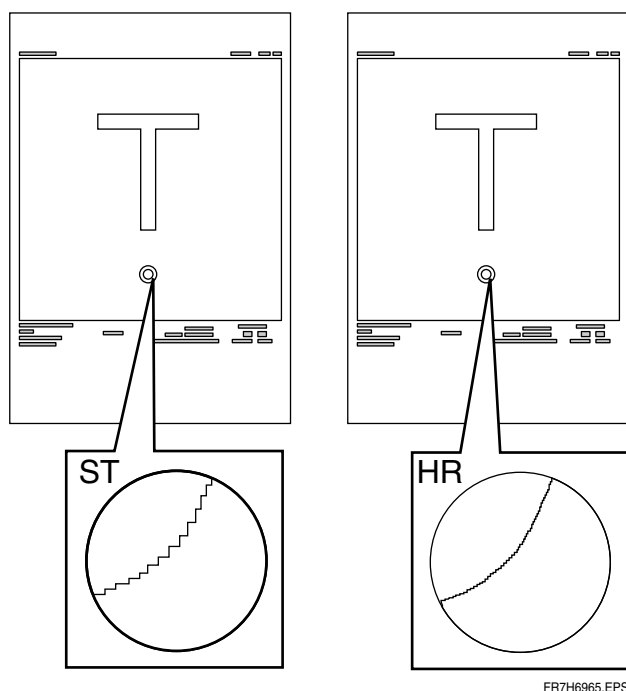
*Check for jitter.*

*If any jitter is found, refer to “10. Troubleshooting Procedures Based on Abnormal Image” in the “Troubleshooting” volume.*

- (4) Compare the images of the washer for ST and HR to ensure that the image for HR is smoother.

#### ◆ CHECK ◆

*Using a loupe, make sure that the image of the washer’s curvature for HR appears smoother than that for ST.*



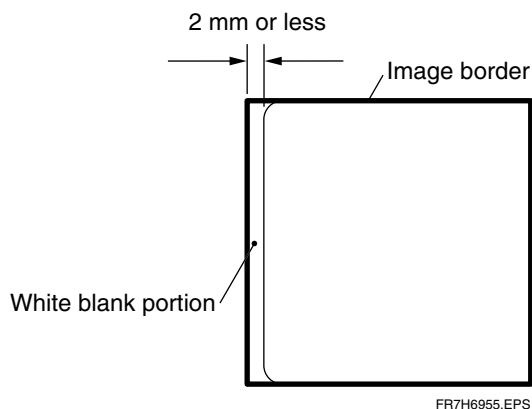
## ■ Check for Format

Make sure that the white blank portion, as measured from the outermost side of the image border of the output film, is 2 mm or less in actual size on the IP.

### ◆ CHECK ◆

*Make sure that the white blank portion is 2 mm or less.*

*If anything abnormal is found, refer to the "Troubleshooting" volume.*



### ◆ NOTE ◆

*The distance measured on the film may differ from the actual size on the IP, depending on the reading size or film size. Using the distance measured on the film and the reduction factor for the film, calculate the actual size on the IP. Compute the actual size on the IP according to the following formula.*

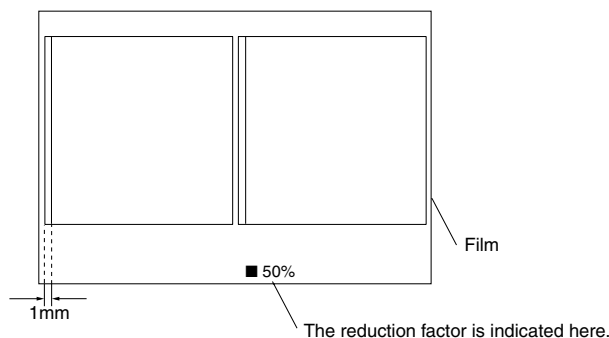
$$\text{Actual size on IP} = \text{Measured value} \times \frac{100}{\text{Reduction factor (\%)}}$$

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### ◇ REFERENCE ◇

*For example, when a two-in-one image of 14"x14" (35cm x 35cm) is outputted to B4 film, the resulting reduction factor is 50%. If the distance measured on the film is 1 mm, then actual size on the IP is 2 mm. Calculate the distance in actual size on the IP as shown below.*

$$\text{Actual size on IP: } \left[ \text{Measured value} \times \frac{100}{\text{Reduction factor (\%)}} \right] = 1 \text{ (mm)} \times \frac{100}{50 \text{ (\%)}} = 2 \text{ (mm)}$$

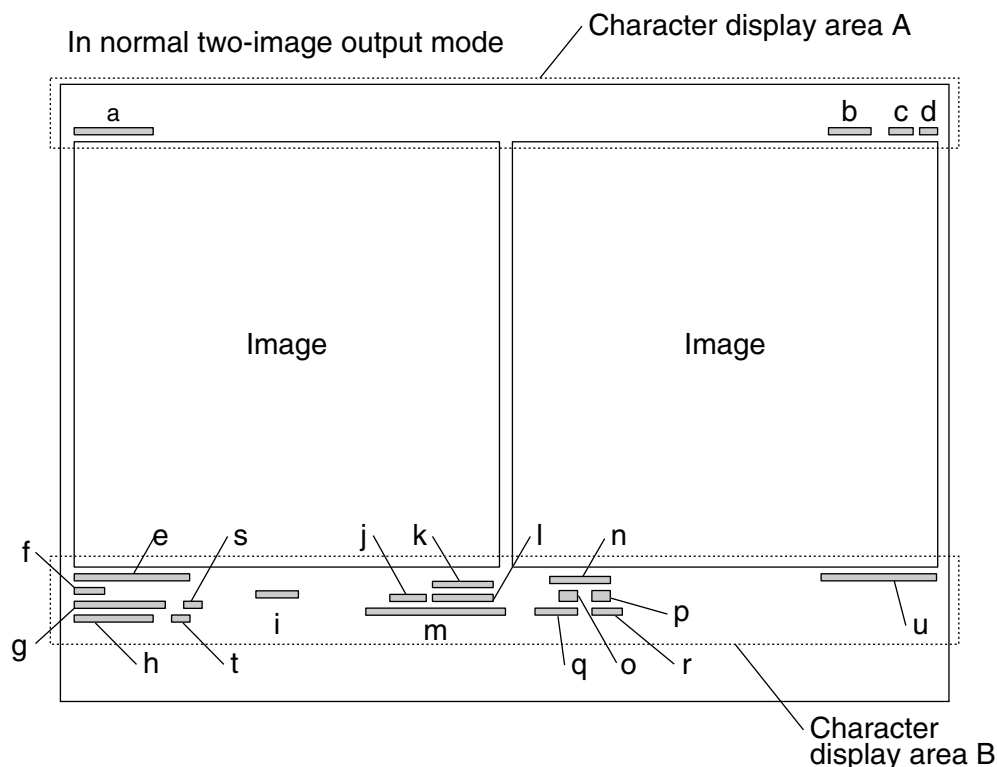


## ■ Check for Output Characters

Make sure that the output characters are indicated correctly on the output film.

### ◆ CHECKS ◆

- Make sure that the output characters are indicated correctly.  
If anything abnormal is found, refer to "4. [2] CONFIGURATION SETTING" in the "Maintenance Utility" volume.
- Ensure that there is nothing abnormal with the output characters.  
If anything abnormal is found, refer to the "Troubleshooting" volume.



#### ○ Character display area A (above the image area)

- a: Hospital name  
(institution name)
- b: IP number
- c: EDR mode and menu code
- d: System ID and image number

#### ○ Character display area B (below the image area)

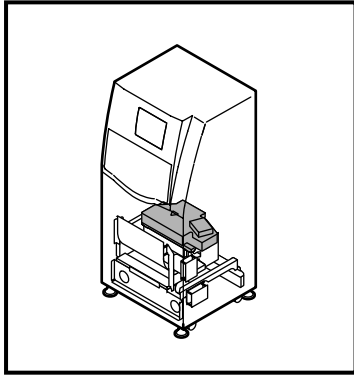
- e: Image processing conditions
- f: Exposure menu name
- g: Standardization conditions  
and amendments
- h: Engineer code and exposure  
table information
- i: Department name
- j: Patient ID
- k: Patient name (kana)
- l: Patient name (kanji)
- m: Exposure date and time
- n: Film mark
- o: Sex
- p: Age or birth date
- q: Image reduction ratio
- r: Set processing information
- s: Left-right reversal mark (R)
- t: Data compression code
- u: PEM information or  
Ene.-Sub./superposition  
information

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## 9.4 Removing and Installing the Scanning Optics Unit



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### CAUTIONS

- When handling the scanning optics unit, exercise care not to shock it.
- Do not put your fingers into the emission port in the bottom of the scanning optics unit.

### ◆ NOTE ◆

If the scanning optics unit is to be replaced with a new one that does not contain the LD assembly, the existing LD assembly should be reused and installed in the new scanning optics unit.

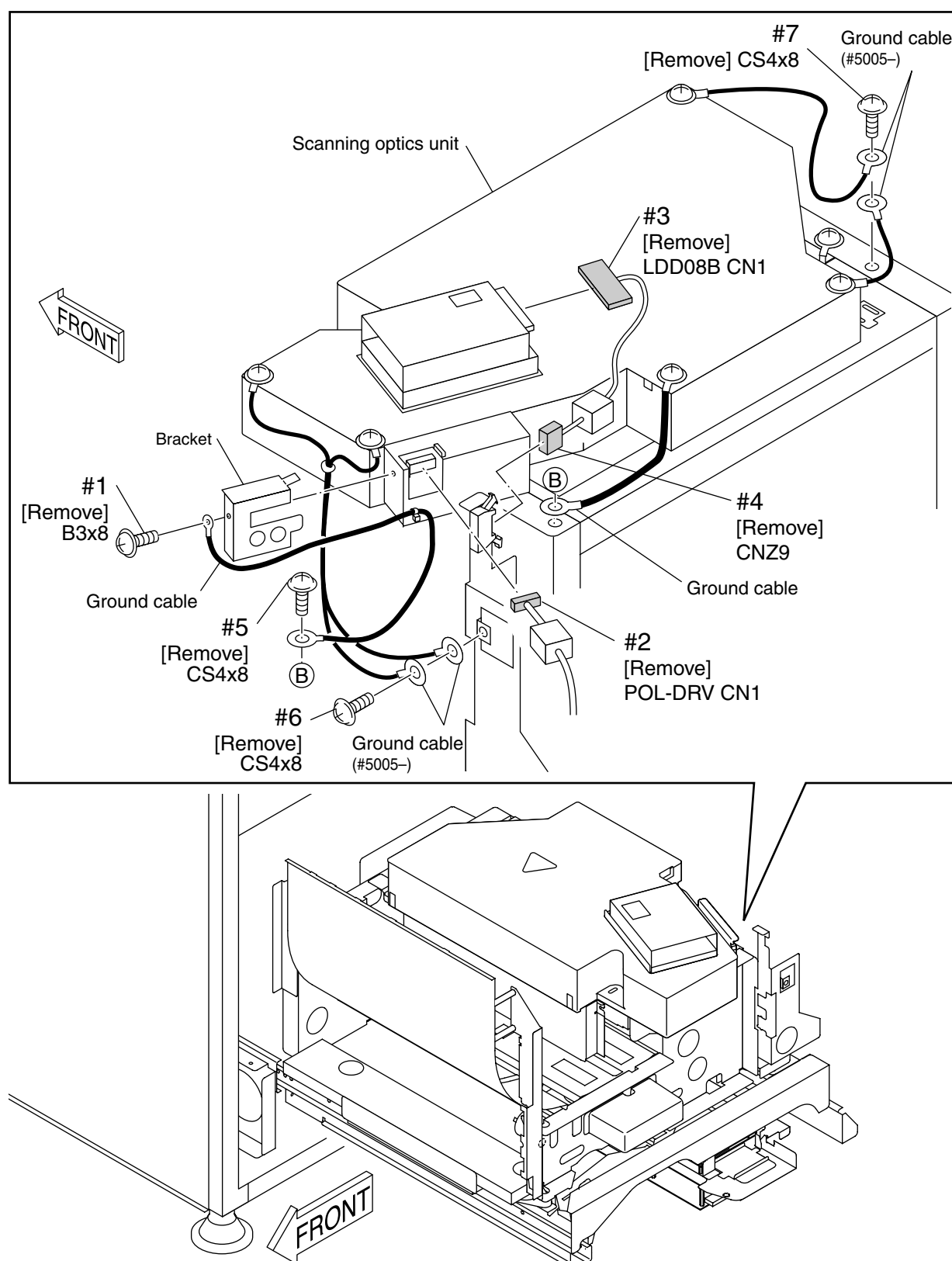
 "9.5 LD Assembly"

### ■ Removal procedure

- (1) Pull out the scanner unit.

 "7. Pulling Out and Pushing In the Scanner Unit"

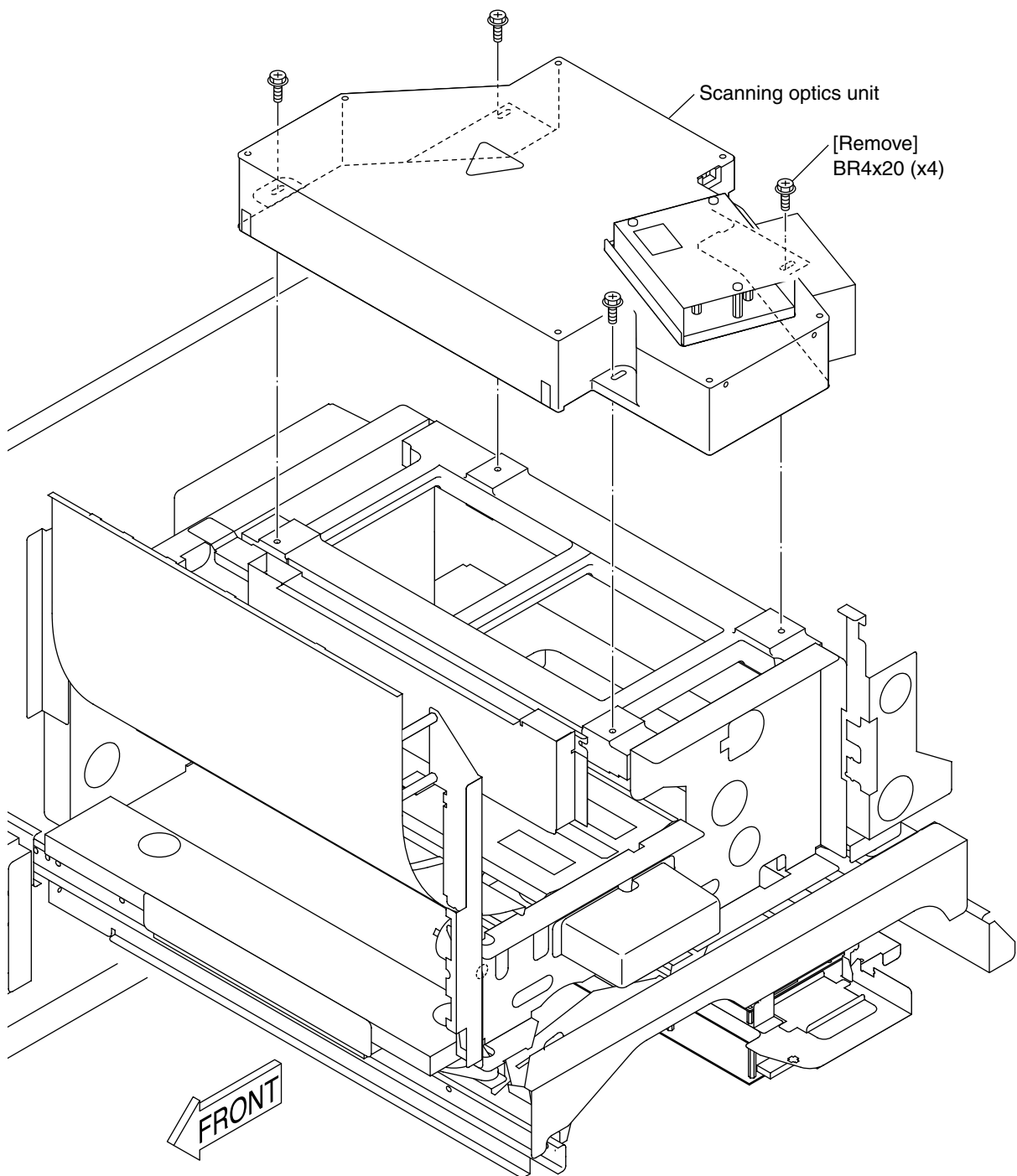
(2) Disconnect the connectors.



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(3) Remove the scanning optics unit.



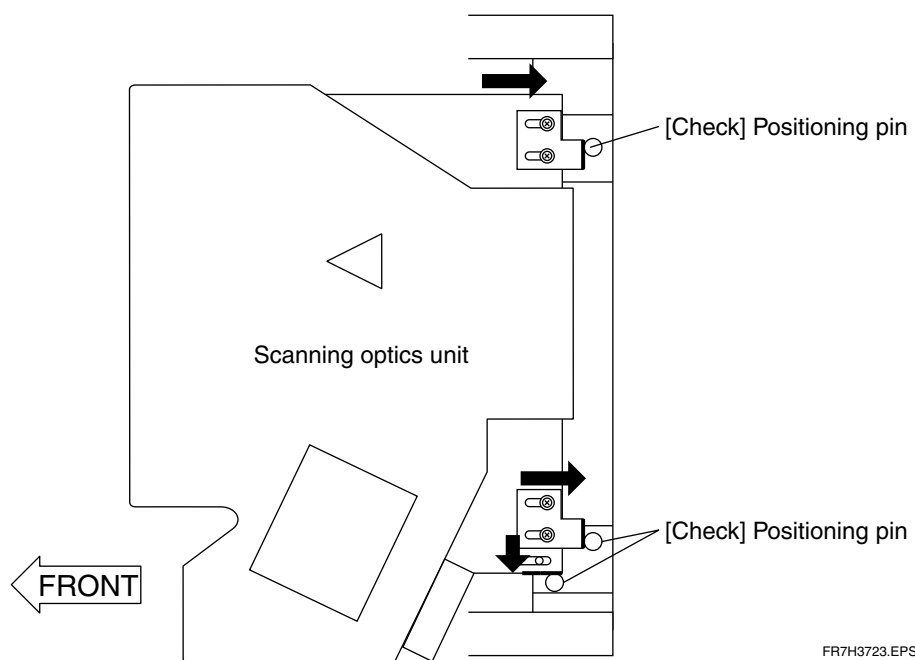
FR7H3722.EPS

## ■ Installation procedure

Accomplish installation by reversing the removal procedure.

### ◆ **CHECK** ◆

*Check that the scanning optics unit is in contact with the positioning pins.*



## ■ Replacement procedure

### ● Summary of replacement procedure

The replacement parts and procedures differ depending on the shipment control number and type of the scanning optics unit installed. Combinations of the parts for replacement and their procedures are summarized in the table below.

Shipment control number	Parts number of scanning optics unit installed	Parts number of scanning optics unit ordered	Procedures needed for replacement	Reference
#2001–#2067	839Y0029 * or 839Y0030 *	839Y0050 * (*1) or 839Y0051 * (*2)	<ul style="list-style-type: none"> <li>• Attach the spacers.</li> <li>• Replace the scanning optics unit.</li> <li>• Disconnect the ground cables.</li> </ul>	● For #2001 to #2067 (machines installed with 839Y0029* or 839Y0030*)
#2001–#2067	839Y0048 * or 839Y0049 *	839Y0048 * (*1) or 839Y0049 * (*2)	<ul style="list-style-type: none"> <li>• Replace the scanning optics unit.</li> <li>• Disconnect the ground cables.</li> </ul>	● For #2001 to #2067 (machines installed with 839Y0048* or 839Y0049*)
#2068–#2069, #5001–#5004				● For #2068, #2069, or #5001 to #5004
#5005–			<ul style="list-style-type: none"> <li>• Replace the scanning optics unit.</li> </ul>	● For #5005 or later




※: Latest version

(\*1) 839Y0050 — 850Y0048 (with the LD assembly)  
Spacer

(\*2) 839Y0051 — 850Y0049 (without the LD assembly)  
Spacer

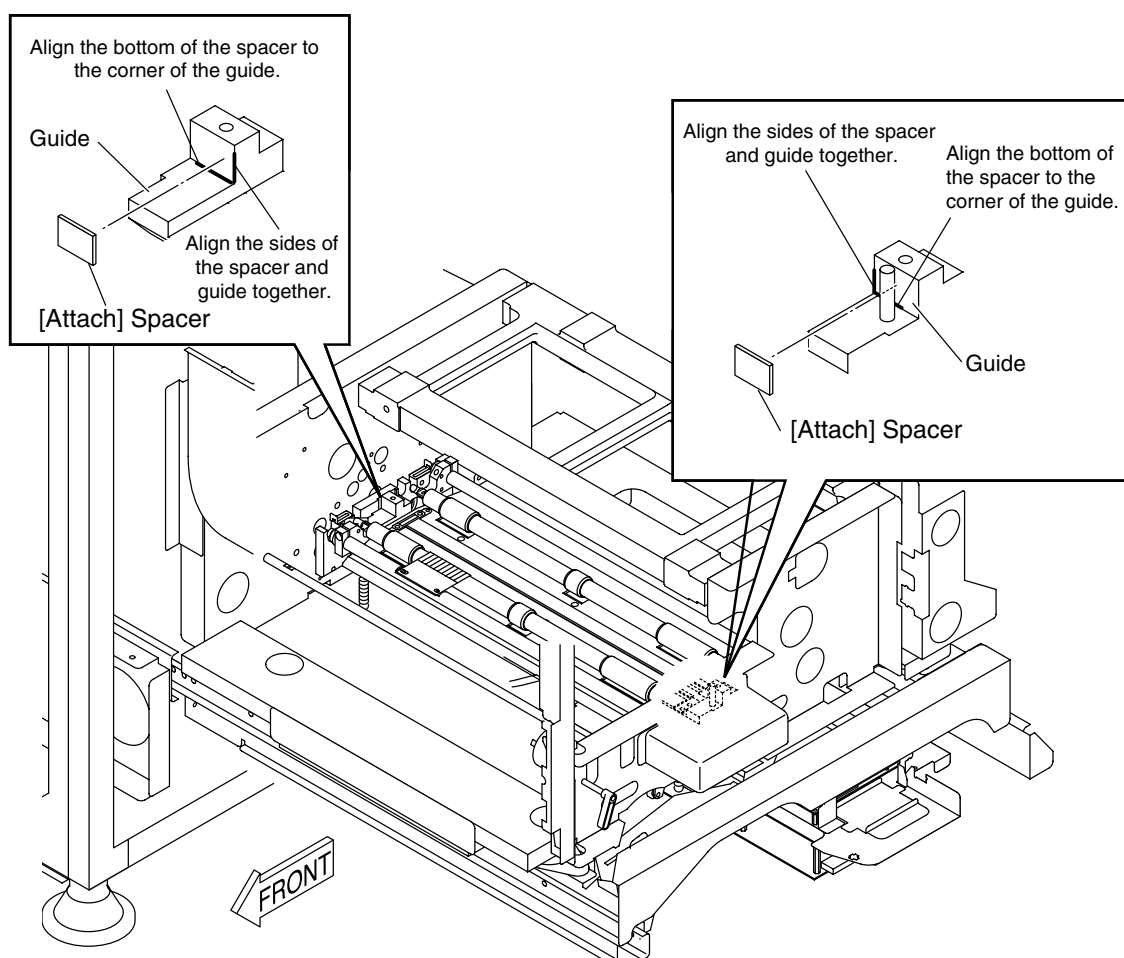
TR7H6011.EPS

● **For #2001 to #2067 (machines installed with 839Y0029\* or 839Y0030\*)**


- (1) Remove the light-collecting guide assembly (for front surface).  
 “10.9 Light-Collecting Guide Assembly (for Front Surface)”
- (2) Remove the scanning optics unit.  
 “■ Removal procedure”
- (3) Remove the mirror mechanism assembly.  
 “10.11 Light-Collecting Mirror and IP Leading-Edge Sensor (SZ1/SED08D)”
- (4) Attach two spacers to the guide of the subscanning unit.

◆ **NOTES** ◆

- *When attaching the spacer, align the sides of the spacer and guide together.*
- *Align the bottom of the spacer to the corner of the guide.*
- *Fit the spacer to the guide so that it does not protrude from the guide.*



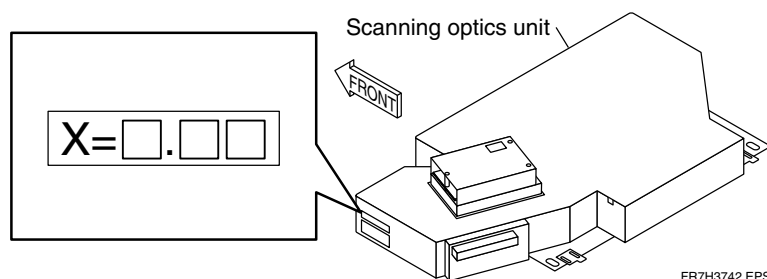
FR7H36B2.EPS

- (5) Install the mirror mechanism assembly.  
 “10.11 Light-Collecting Mirror and IP Leading-Edge Sensor (SZ1/SED08D)”

- (6) Write down on the notepad the reading width adjustment value indicated on the label located on the side of the new scanning optics unit.

◇ **REFERENCE** ◇

*Use this value for adjustment after installation (because it becomes inaccessible when the scanner is pushed in).*



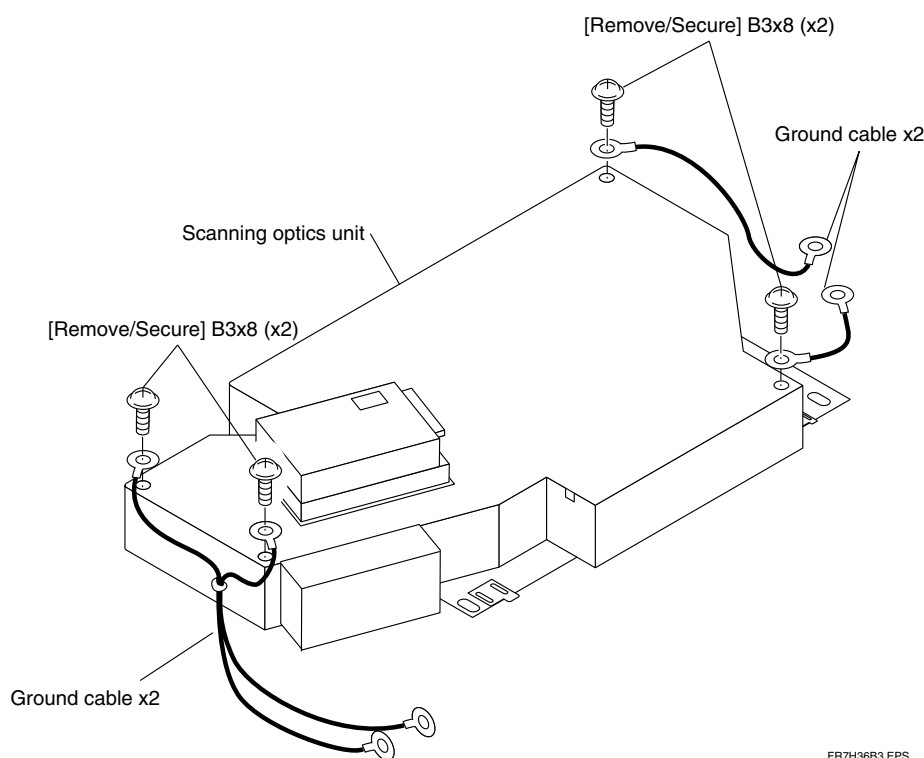
- (7) Install the new scanning optics unit.

☞ "■ Installation procedure"



**CAUTION**

*For machines with shipment control numbers of 5004 or earlier, be sure to disconnect the four ground cables. The machines with shipment control numbers of 5004 or earlier do not have threaded holes for securing the ground cables. Thus, if those cables remain connected, they cause abnormal images due to noise.*



- (8) Install the light-collecting guide assembly (for front surface).  
☞ "10.9 Light-Collecting Guide Assembly (for Front Surface)"
- (9) Perform adjustment after installation of the scanning optics unit.  
☞ "■ Check/adjustment procedure"

- For #2001 to #2067 (machines installed with 839Y0048\* or 839Y0049\*)
- For #2068, #2069, or #5001 to #5004

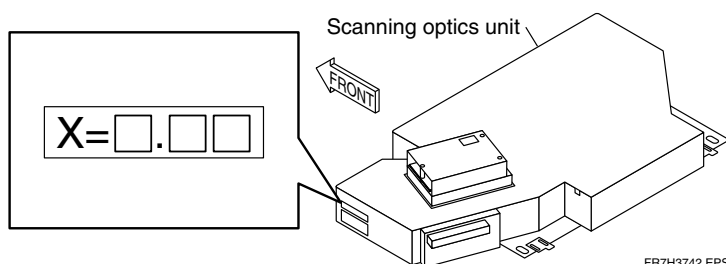
(1) Remove the scanning optics unit.

☞ "■ Removal procedure"

(2) Write down on the notepad the reading width adjustment value indicated on the label located on the side of the new scanning optics unit.

### ◇ REFERENCE ◇

*Use this value for adjustment after installation (because it becomes inaccessible when the scanner is pushed in).*



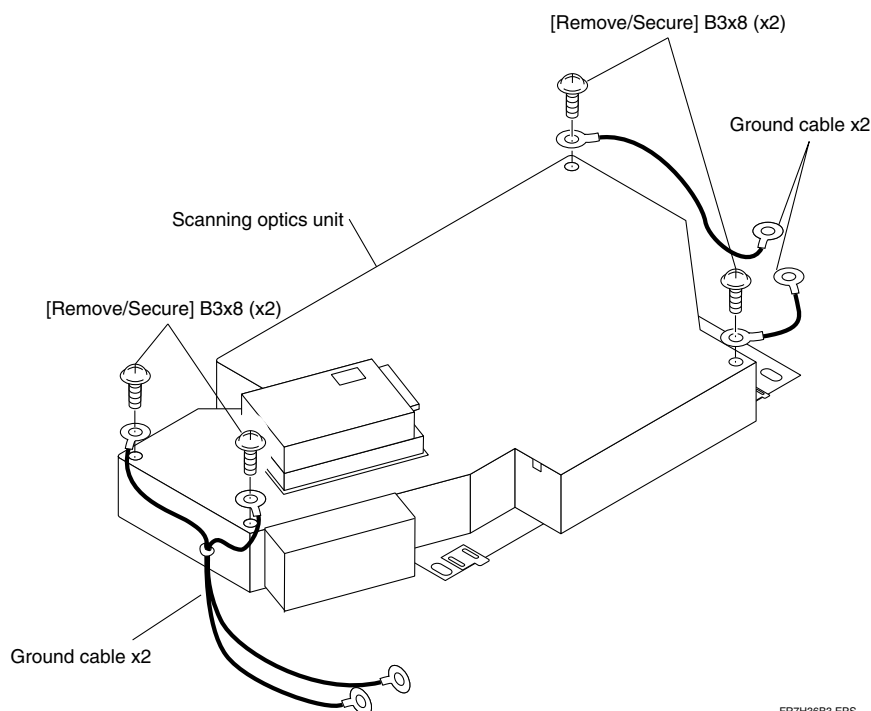
(3) Install the new scanning optics unit.

☞ "■ Installation procedure"



### CAUTION

*For machines with shipment control numbers of 5004 or earlier, be sure to disconnect the four ground cables. The machines with shipment control numbers of 5004 or earlier do not have threaded holes for securing the ground cables. Thus, if those cables remain connected, they cause abnormal images due to noise.*



(4) Perform adjustment after installation of the scanning optics unit.

☞ "■ Check/adjustment procedure"

**● For #5005 or later**

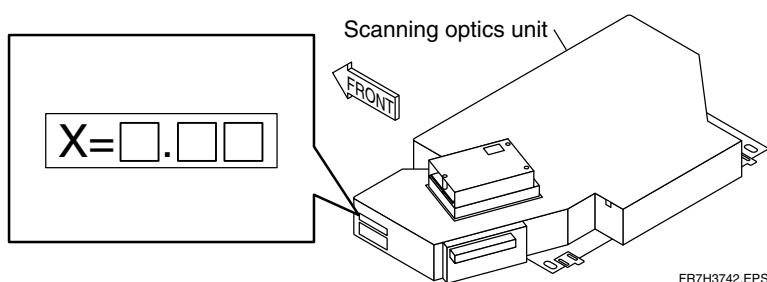
- (1) Remove the scanning optics unit.

☞ “■ Removal procedure”

- (2) Write down on the notepad the reading width adjustment value indicated on the label located on the side of the new scanning optics unit.

◇ **REFERENCE** ◇

*Use this value for adjustment after installation (because it becomes inaccessible when the scanner is pushed in).*






- (3) Install the new scanning optics unit.

☞ “■ Installation procedure”

- (4) Perform adjustment after installation of the scanning optics unit.

☞ “■ Check/adjustment procedure”

## ■ Check/adjustment procedure

- (1) Install all covers.
- (2) Turn ON the machine.  
Verify that the machine starts up normally.
- (3) Adjust the format.  
 "9.1 Adjusting the Format"
- (4) Make shading/sensitivity corrections.  
 "9.2 Shading and Sensitivity Corrections"
- (5) Check for image problems.  
 "9.3 Checking for Image Problems"



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## 9.5 LD Assembly



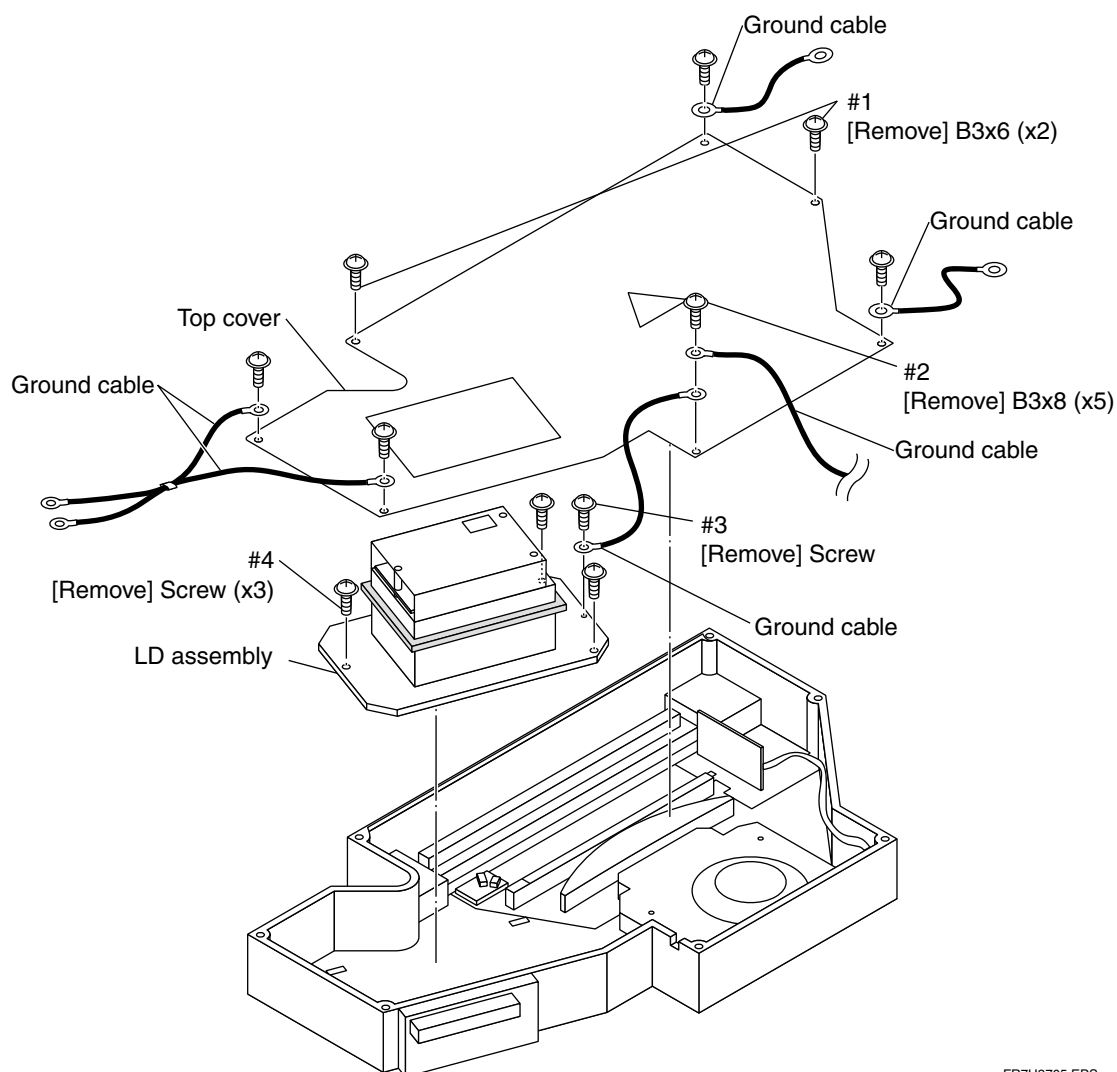
### CAUTIONS

- Do not disconnect the LDD08B board connectors CN2 and CN4 because the LD protection feature becomes disabled, causing a risk of LD failure.
- Do not touch the printed circuit pattern or IC on the LDD08B board.
- After the top cover is removed from the scanning optics unit, exercise care so that it does not collect dust.
- When performing any servicing procedure with the top cover removed, wear a mask so that saliva does not come into contact with the hardware.
- Do not shock the scanning optics unit.
- Since static electricity may damage the LD, do not uncover the LD assembly.
- Never touch the optical lenses or mirrors.

### ■ Removal procedure

- (1) Pull out the scanner unit.
  - ☞ “7. Pulling Out and Pushing In the Scanner Unit”
- (2) Remove the scanning optics unit.
  - ☞ “9.4 Removing and Installing the Scanning Optics Unit”

(3) Replace the LD assembly.

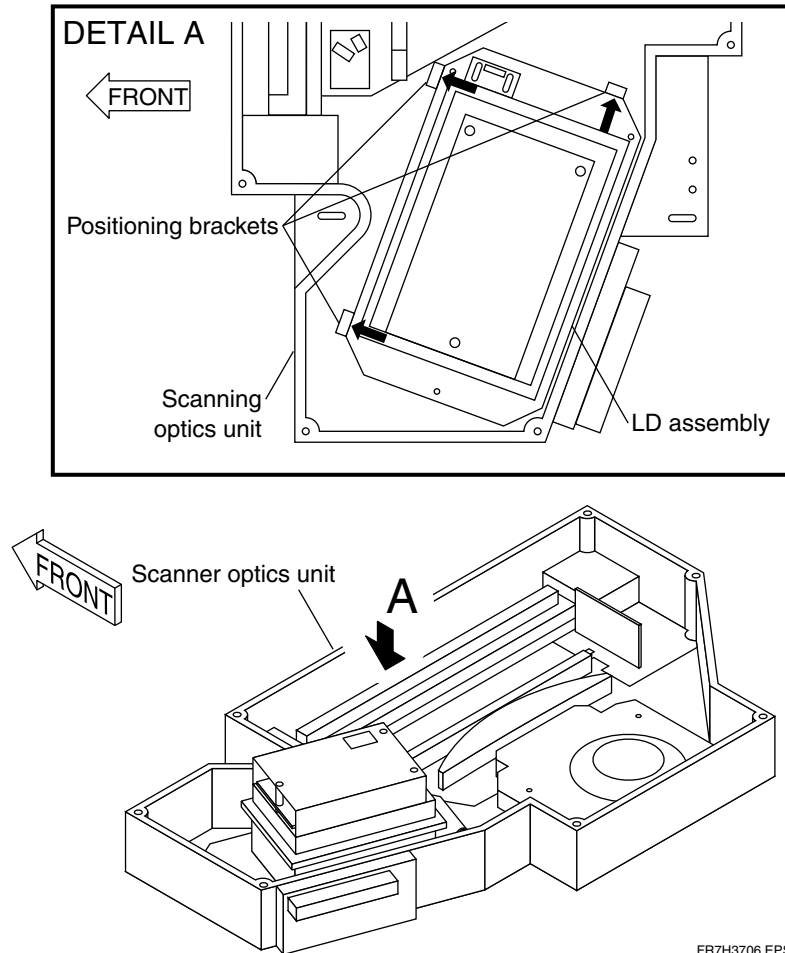


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## ■ Installation procedure

### ◆ NOTE ◆

*When installing the LD assembly, properly position it by pressing it against the three positioning brackets.*




Accomplish installation by reversing the removal procedure.

## ■ Check procedure



### CAUTION

*Before removing a cover, be sure to turn OFF the high-voltage switch. Removing a cover with the machine turned ON causes photomultiplier damage.*

- (1) Turn ON the machine.
- (2) Verify that the machine starts up normally.
- (3) Check for image problems.  
 "9.3 Checking for Image Problems"

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## 9.6 Polygon Assembly



### CAUTIONS



- Do not touch the printed circuit patterns or ICs on PC boards.
- After the top cover is removed from the scanning optics unit, exercise care so that it does not collect dust.
- When performing any servicing procedure with the top cover removed, wear a mask so that saliva does not come into contact with the hardware.
- Do not shock the scanning optics unit.
- Since static electricity may damage the LD, do not uncover the LD assembly.
- Never touch the optical lenses or mirrors.
- When servicing an LD board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the board.

### ■ Removal procedure

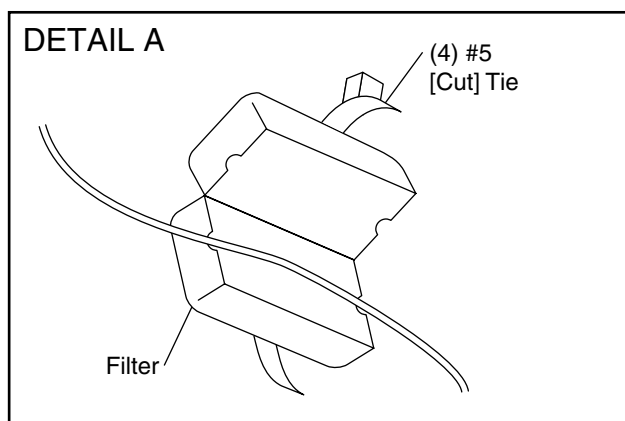
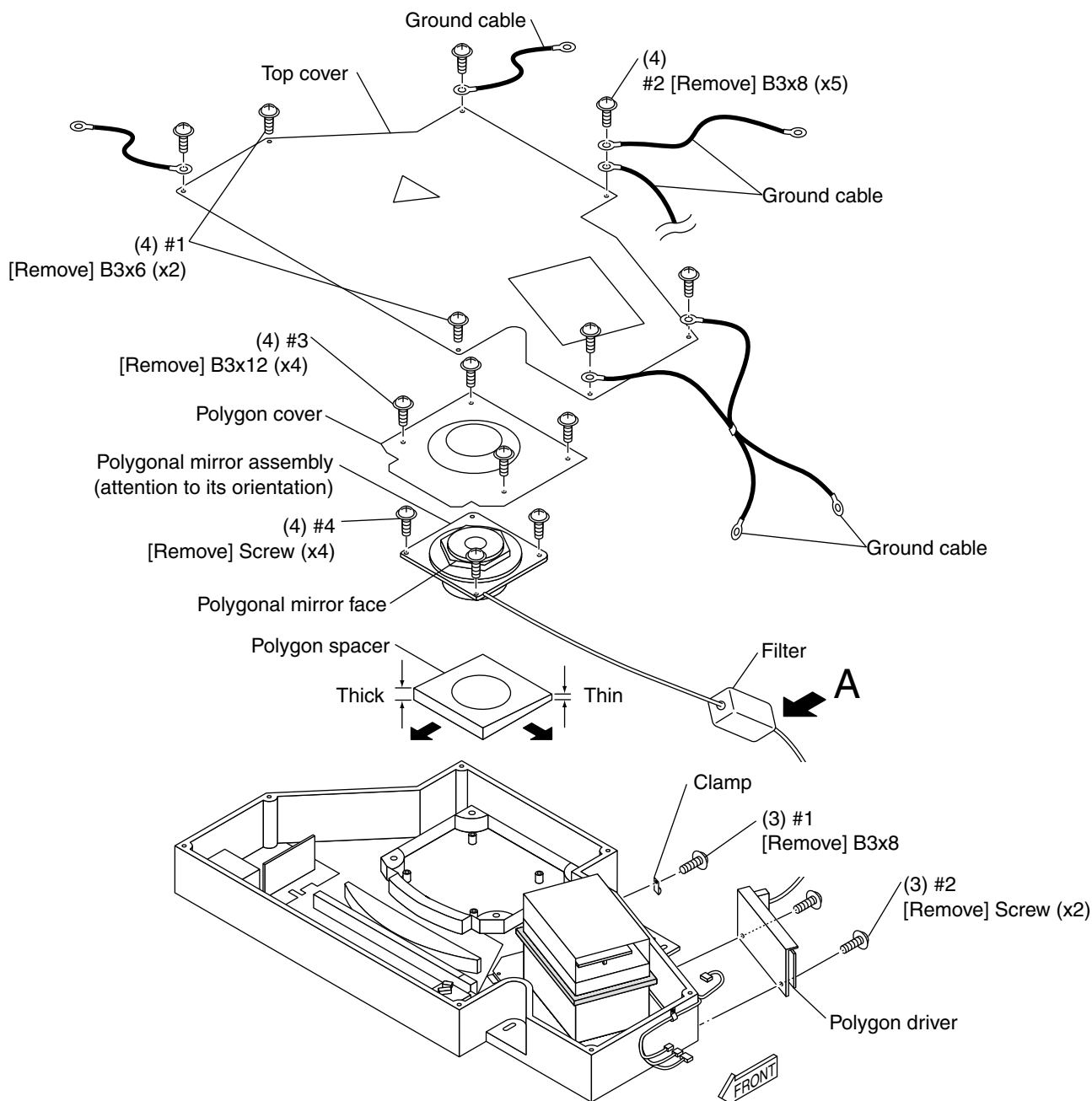


### CAUTIONS

- Do not drop the polygon assembly or bump it against anything. If it is shocked, its rotation axis is displaced beyond use.
- Never touch the mirror surface of the polygon assembly. (Even when you wear gloves, do not touch the mirror surface.) Touching the polygon mirror surface makes the polygon assembly useless.

- (1) Pull out the scanner unit.  
 "7. Pulling Out and Pushing In the Scanner Unit"
- (2) Remove the scanning optics unit.  
 "9.4 Removing and Installing the Scanning Optics Unit"
- (3) Remove the polygon driver.

(4) Remove the polygon assembly together with the polygon spacer.



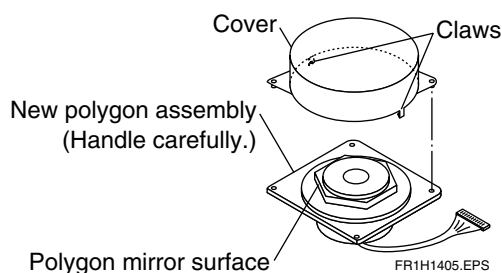
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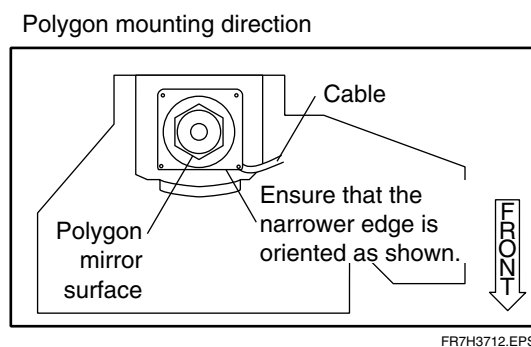
## ■ Installation procedure

### ◆ NOTES ◆

- *When uncovering the new polygon assembly, release the cover claws and exercise care not to touch the polygon mirror surface.*



- *Press the polygon and its spacer in the direction of the arrow shown below, and then screw them down.*



- *When installing the polygon, orient it properly. When it is viewed from above, the narrower edge should face forward.*

Accomplish installation by reversing the removal procedure.

## ■ Check procedure

- (1) Turn ON the high-voltage switch (S1) on the SCN08D board.
- (2) Install all covers.
- (3) Turn ON the machine.  
Verify that the machine starts up normally.
- (4) Check for image problems.

☞ “9.3 Checking for Image Problems”

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## 9.7 SYN08A Board



### CAUTIONS

- Do not disconnect the LDD08B board connectors CN2 and CN4 because the LD protection feature becomes disabled, causing a risk of LD failure.
- Do not touch the printed circuit patterns or ICs on PC boards.
- When handling the scanning optics unit, exercise care not to shock it.
- After the top cover is removed from the scanning optics unit, exercise care so that it does not collect dust.
- When performing any servicing procedure with the top cover removed, wear a mask so that saliva does not come into contact with the hardware.
- When servicing an LD board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the board.

### ■ Removal procedure



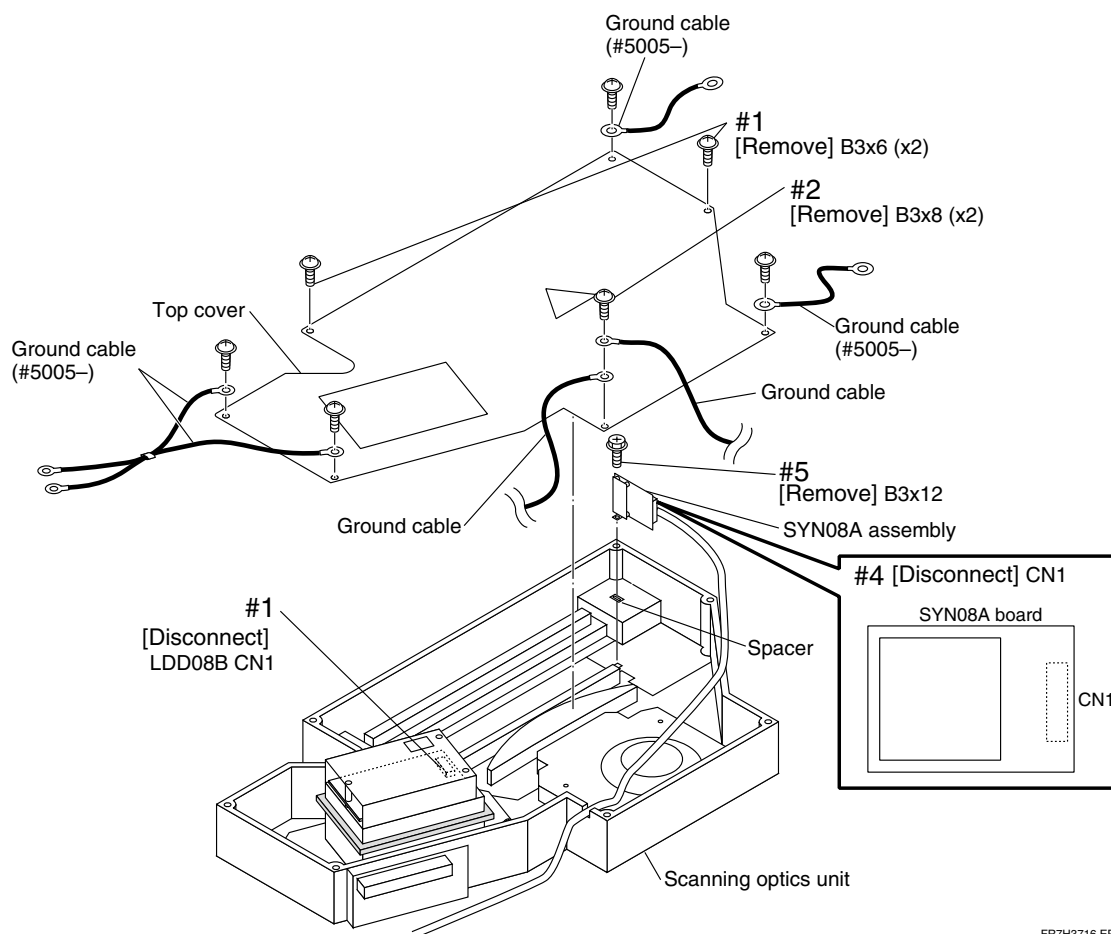
### CAUTION

*Before removing a cover, be sure to turn OFF the high-voltage switch. Removing a cover with the machine turned ON causes photomultiplier damage.*

(1) Pull out the scanner unit.

 “7. Pulling Out and Pushing In the Scanner Unit”

(2) Remove the SYN08A assembly.

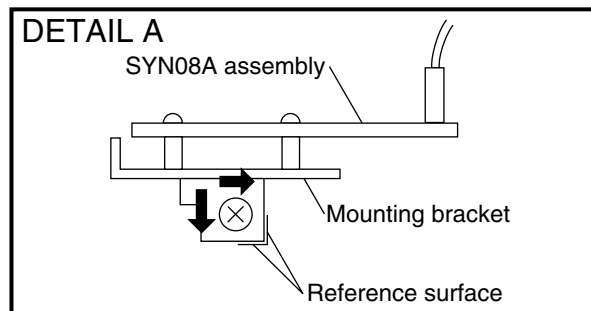
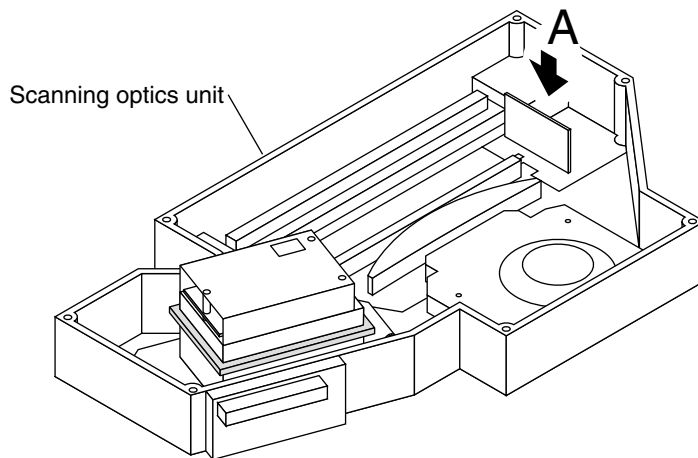


FR7H3716.EPS

## ■ Installation procedure

### ◆ NOTES ◆

- When installing the SYN08A assembly, properly position it by pressing it against the reference surface of the positioning bracket.



FR7H3717.EPS

- Use the existing spacers for the newly installed assembly.
- Position the cable in the cable guide.

Accomplish installation by reversing the removal procedure.

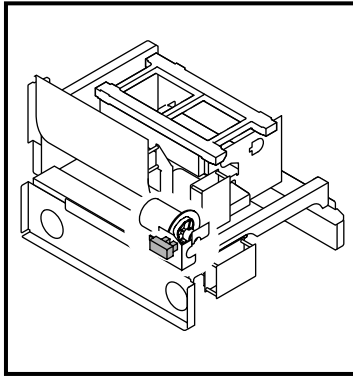
## ■ Check procedure

- (1) Install all covers.
- (2) Turn ON the machine.  
Verify that the machine starts up normally.
- (3) Adjust the format.  
☞ "9.1 Adjusting the Format"
- (4) Check for image problems.  
☞ "9.3 Checking for Image Problems"

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## 10. Removing and Installing the Subscanning Unit

### 10.1 Driving-Side Grip Release HP Sensor (SZ2)



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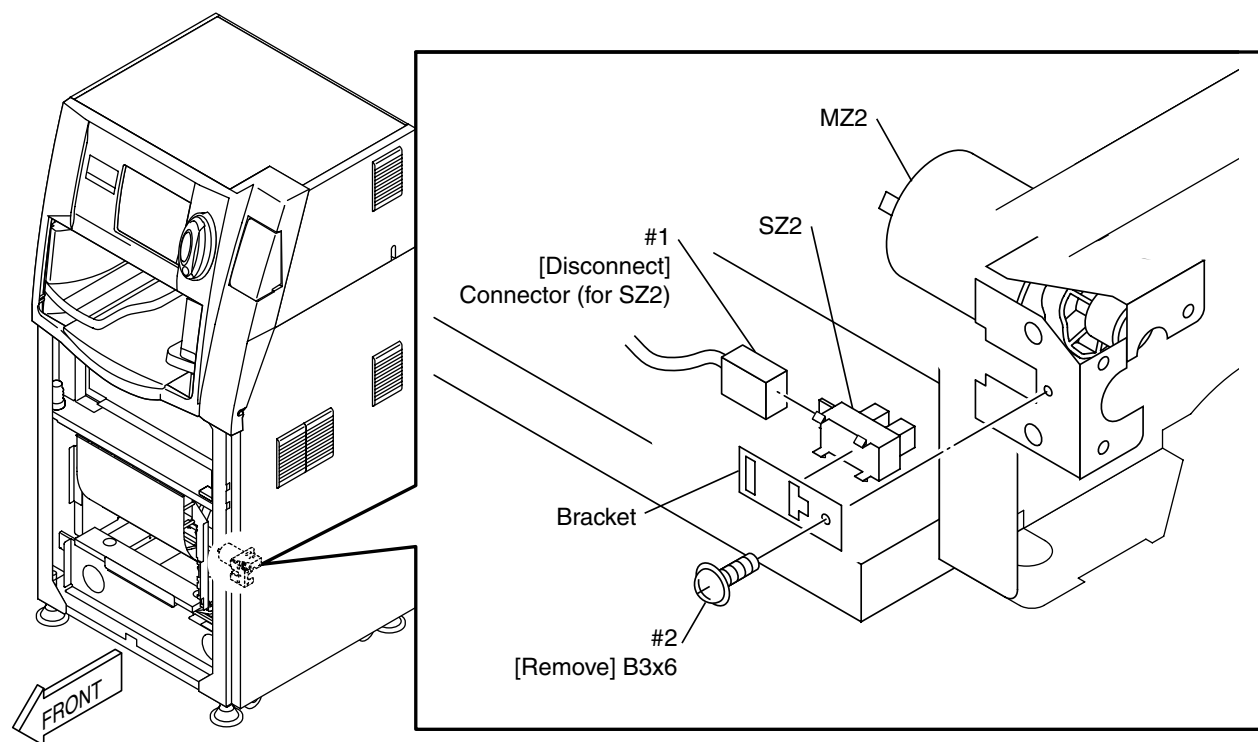
#### ■ Removal procedure

(1) Remove the following covers:

- Upper left-hand side cover
- Upper right-hand side cover
- Upper front cover
- Lower front cover
- Lower left-hand side cover
- Lower right-hand side cover
- Light protect plate

☞ “3. Removing and Installing the Covers”

(2) Remove the SZ2.



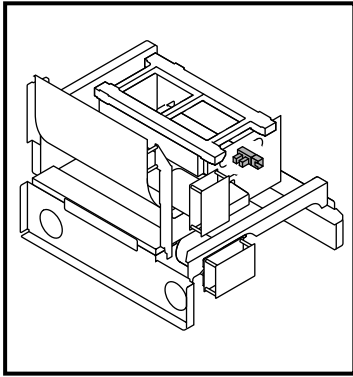
FR7H3601.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.



## 10.2 Mirror HP Sensor (SZ4)



FR7H3066.EPS

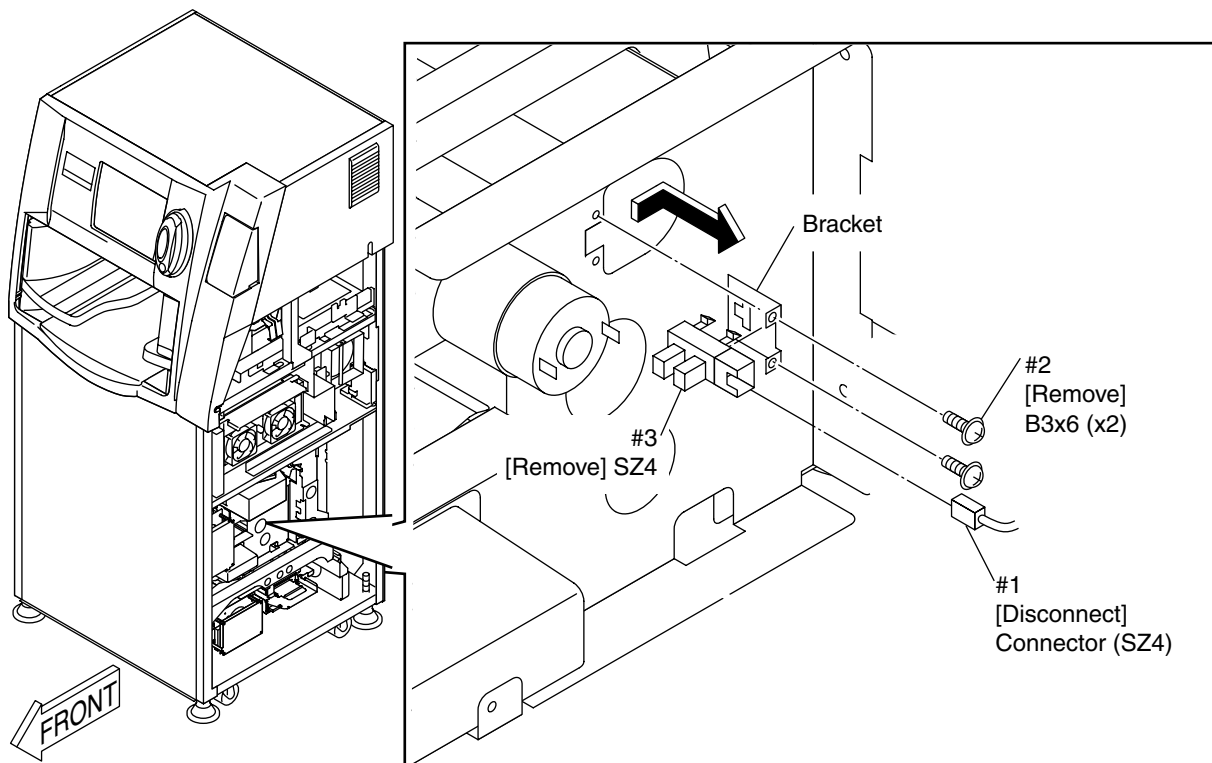
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Right-hand inner cover

☞ “3. Removing and Installing the Covers”

(2) Remove the SZ4.

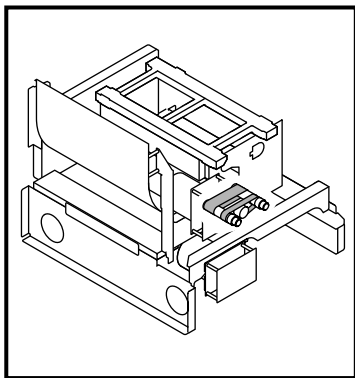


FR7H3602.EPS

**■ Installation procedure**

To accomplish installation, reverse the removal procedure.

## 10.3 Rubber Belt and SUS Belt



FR7H3067.EPS

### ■ Removal procedure

(1) Remove the following covers:

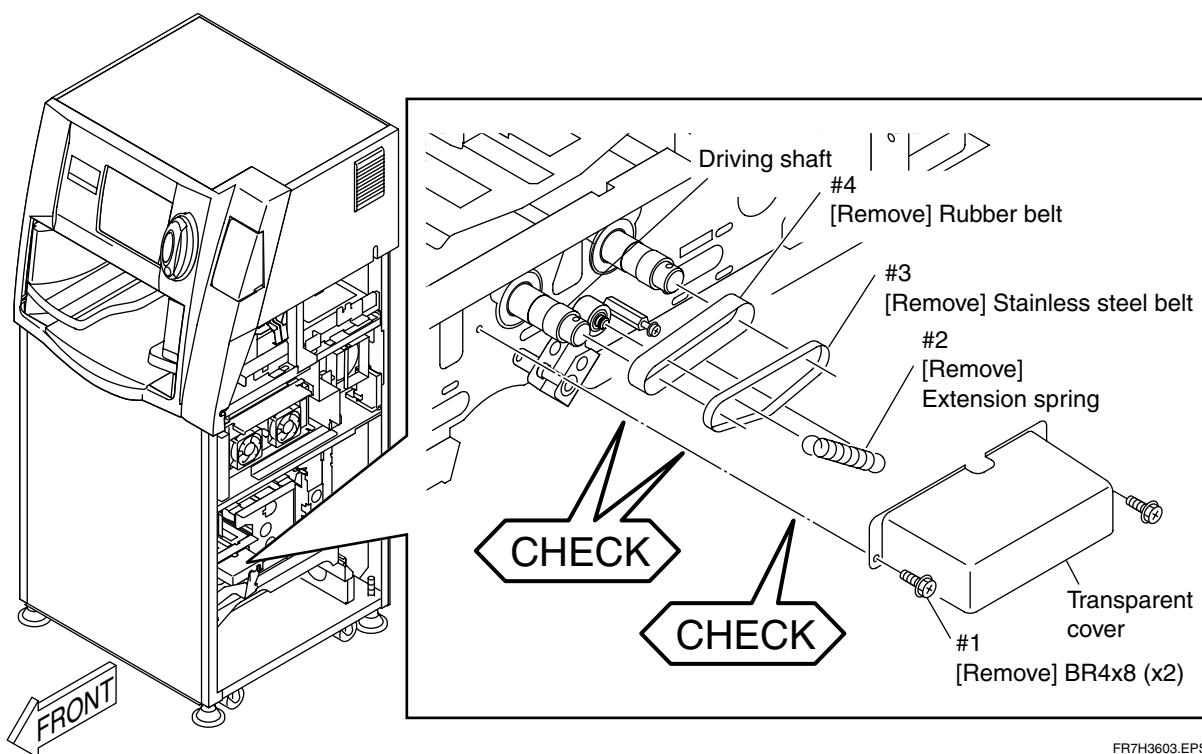
- Lower front cover
- Lower right-hand side cover
- Right-hand inner cover

☞ “3. Removing and Installing the Covers”

(2) Remove the rubber belt and SUS belt.

#### ◇ REFERENCE ◇

*Remove the rubber belt while rotating the driving shaft.*



FR7H3603.EPS

## ■ Installation procedure

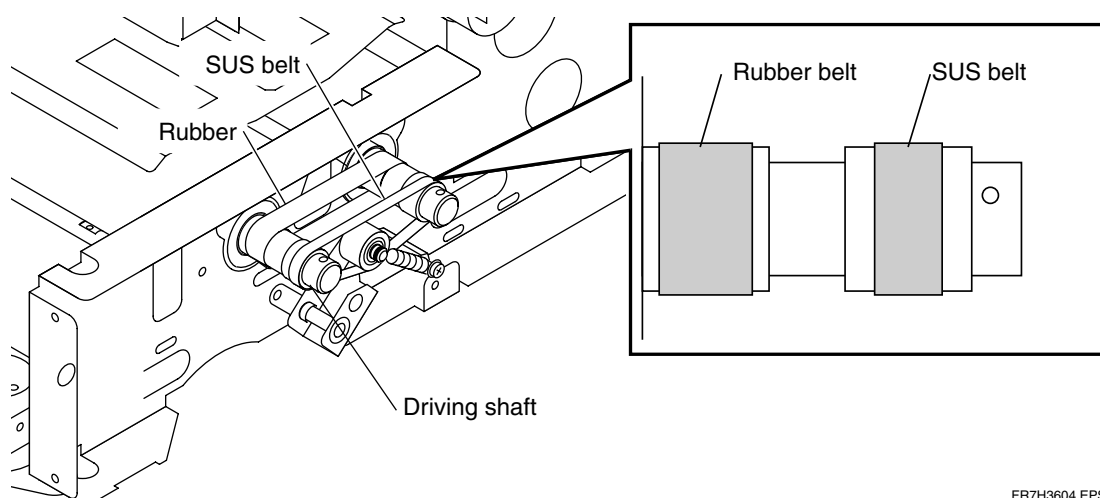
To accomplish installation, reverse the removal procedure.

### ◇ REFERENCE ◇

*Install the rubber belt while rotating the driving shaft.*

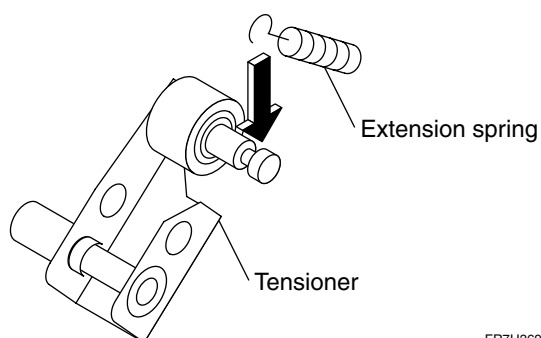
## ■ Check procedure

- Check that the rubber belt and SUS belt are positioned as indicated in the figure below.
- Rotate the driving shaft to check that the rubber belt and SUS belt do disengage.




FR7H3604.EPS

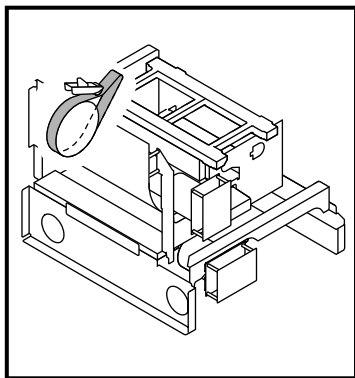
- Check that the extension spring is engaged with the tensioner.



FR7H3698.EPS

- Check for image problems.  
 "9.3 Checking for Image Problems"

## 10.4 Kapton® Belt



FR7H3068.EPS

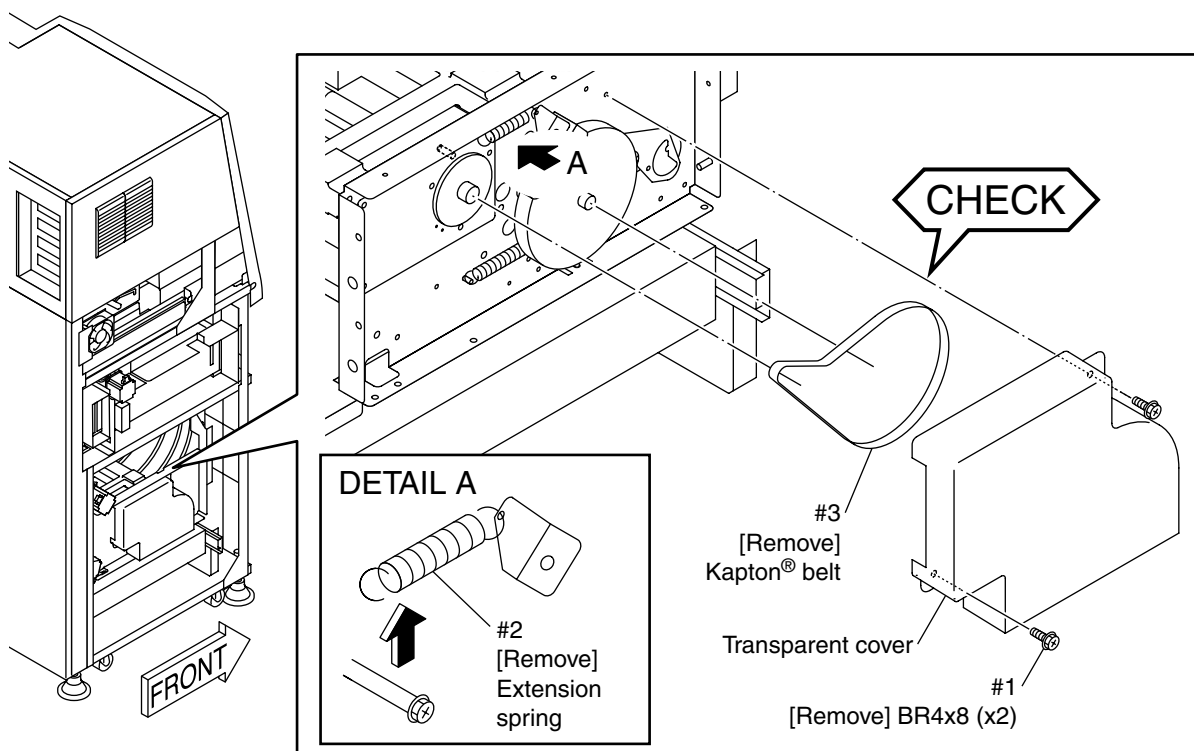
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower left-hand side cover
- Left-hand inner cover

☞ “3. Removing and Installing the Covers”

(2) Remove the Kapton® belt.



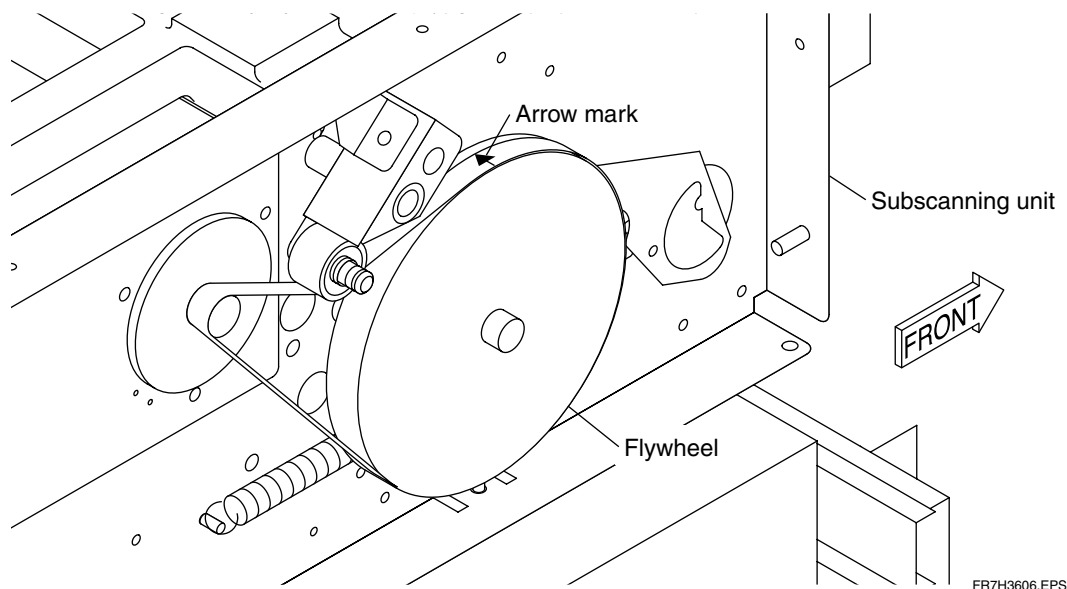
FR7H3605.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

### ◆ INSTRUCTIONS ◆

- When installing the Kapton® belt, ensure that the arrow mark printed on it faces toward the subscanning unit.
- After the Kapton® belt is installed, manually rotate the flywheel to check that the belt does not disengage.

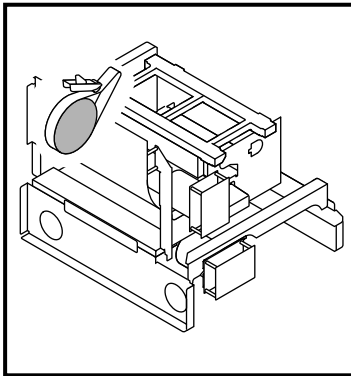


## ■ Check procedure

- Check that the installed Kapton® belt is properly oriented.
- Manually rotate the flywheel to check that the Kapton® belt does not disengage.
- Check for image problems.

☞ “9.3 Checking for Image Problems”

## 10.5 Flywheel



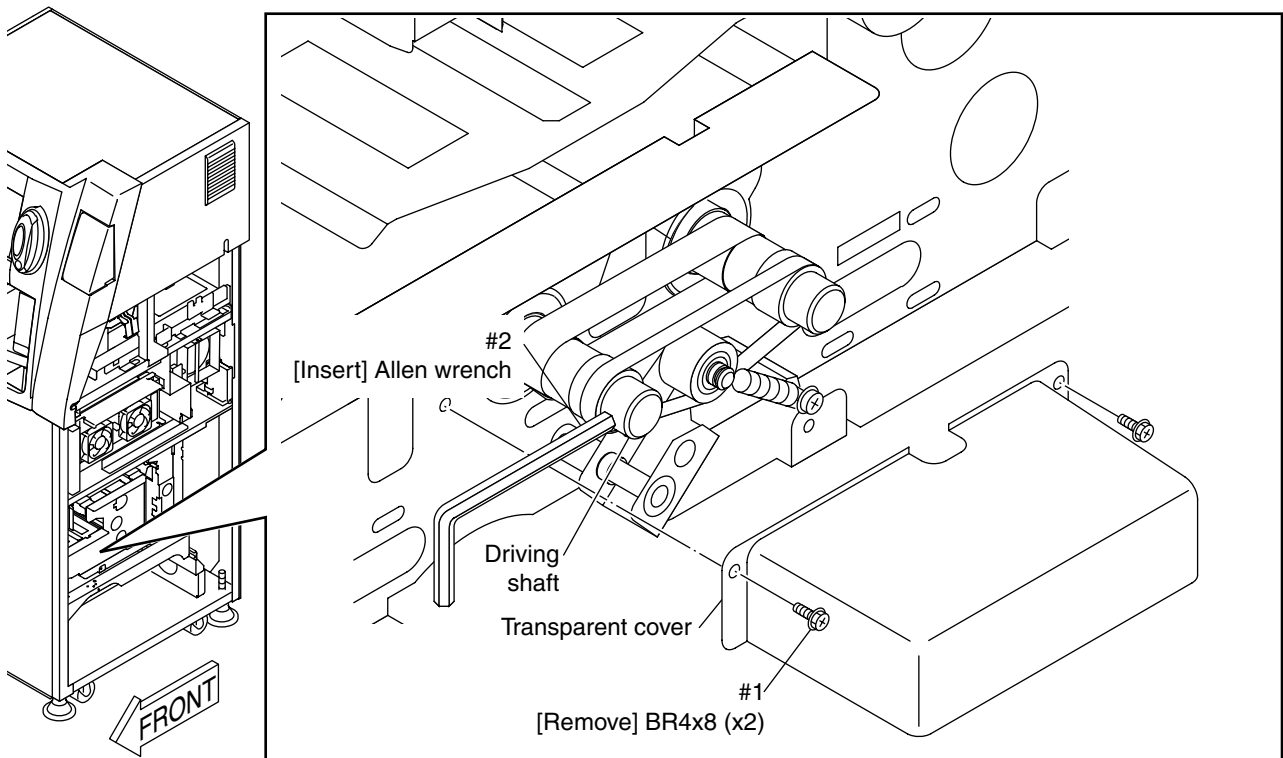
FR7H3070.EPS

### ■ Removal procedure

- (1) Remove the Kapton® belt.
  - ☞ “10.4 Kapton® belt”
- (2) Remove the following covers:
  - Lower right-hand side cover
  - Right-hand inner cover
 ☞ “3. Removing and Installing the Covers”

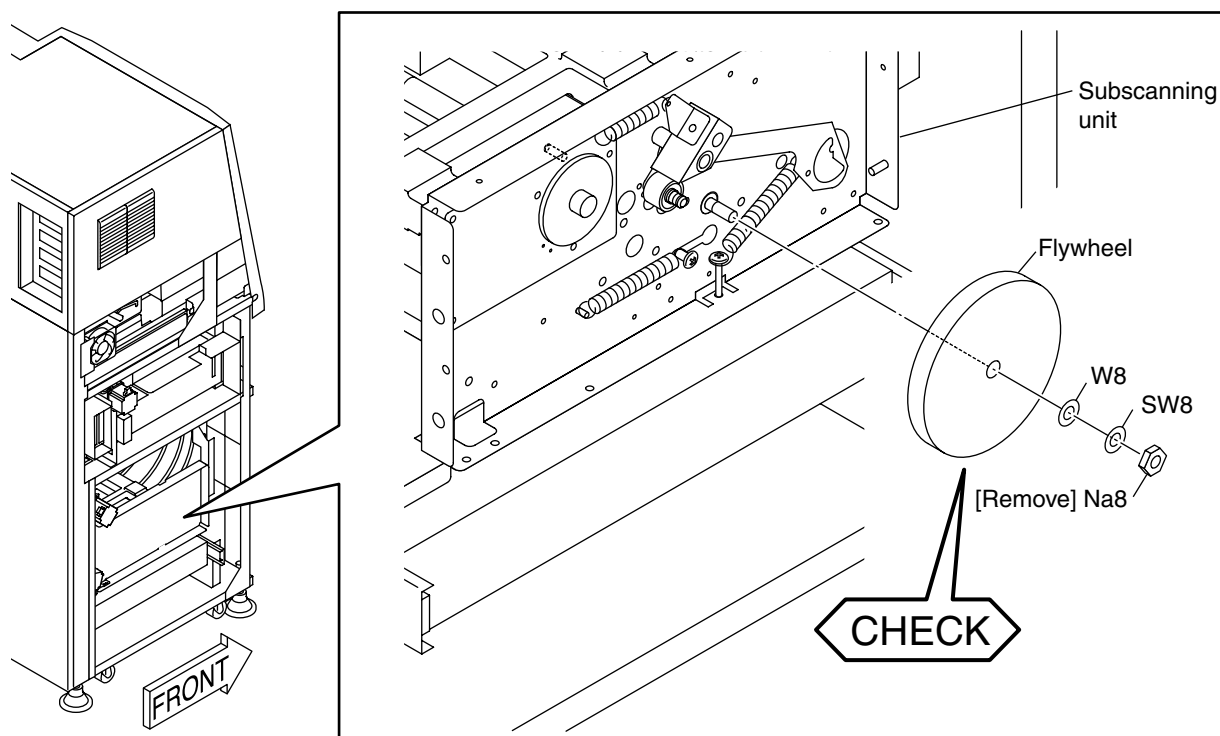
### ◆ NOTE ◆

*Insert an Allen wrench into the hole in the driving shaft. While retaining the shaft, remove the nut from the flywheel.*



FR7H3608.EPS

(3) Remove the flywheel.



FR7H3609.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

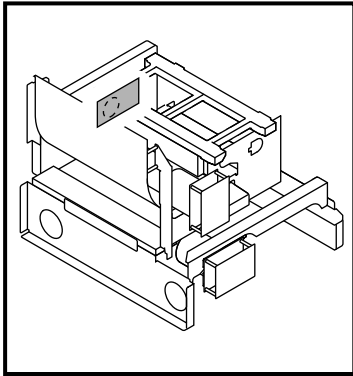
## ■ Check procedure

Check for image problems.

☞ "9.3 Checking for Image Problems"



## 10.6 Subscanning Motor MZ1 (FFM)



FR7H3071.EPS

### ■ Removal procedure

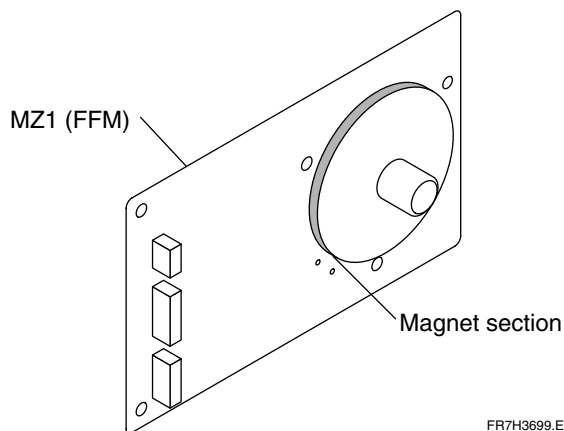
(1) Remove the flywheel.

☞ “10.5 Flywheel”



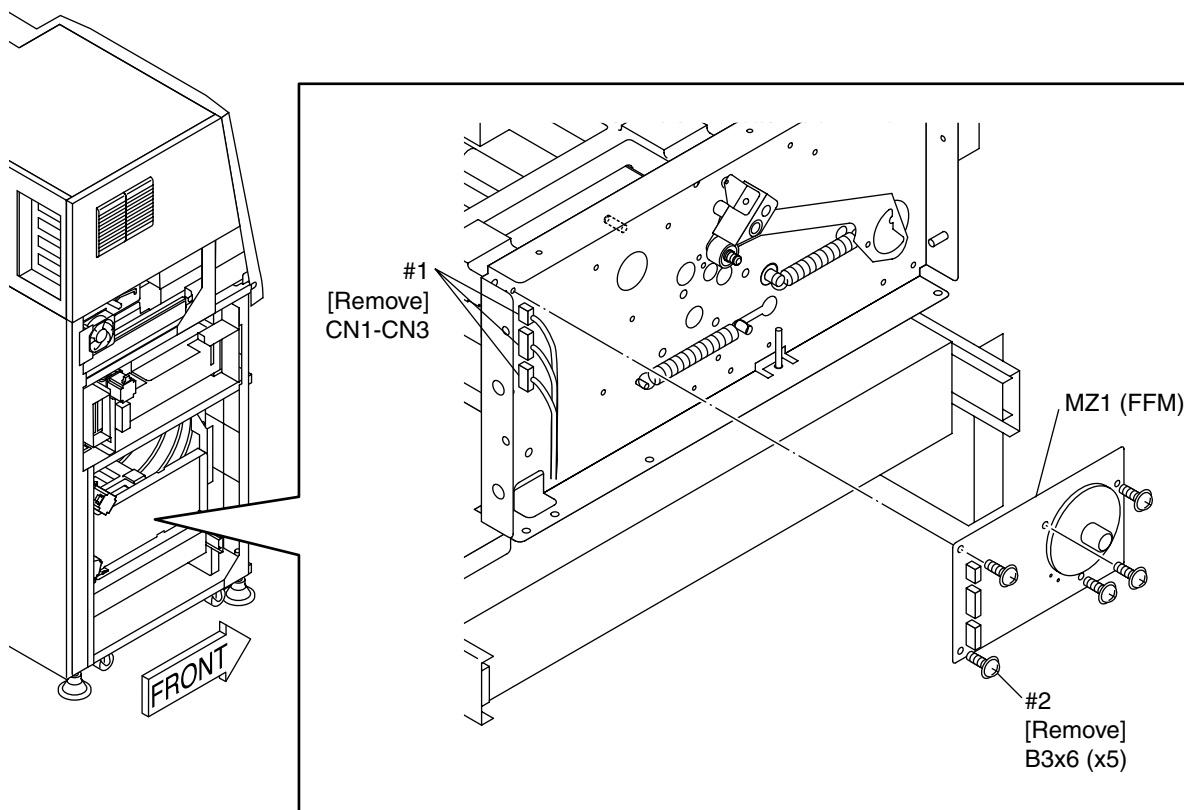
### CAUTIONS

- When servicing a PC board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the PC board.
- When removing or installing the MZ1 (FFM), do not use a magnetic tip screwdriver.
- Do not touch the magnet section of the MZ1 (FFM).



FR7H3699.EPS

(2) Remove the MZ1 (FFM).



FR7H3611.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

## ■ Check/adjustment procedure

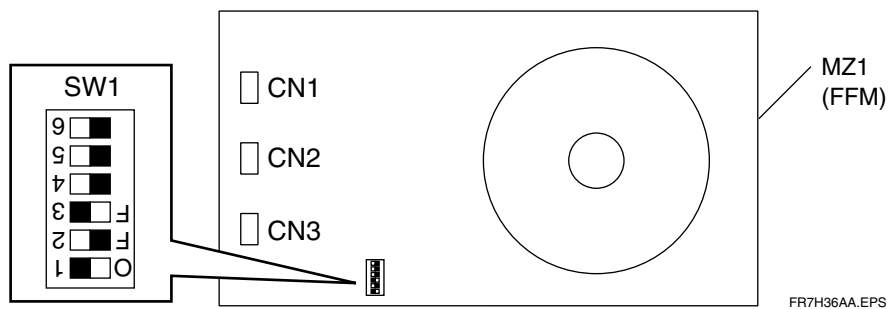
After MZ1 (FFM) replacement, complete the following procedures:

- DIP switch setup
- Output image check

### ● DIP switch setup

Note the DIP switch settings prevailing before replacement and use the same settings for the newly installed MZ1.

Typical DIP switch settings



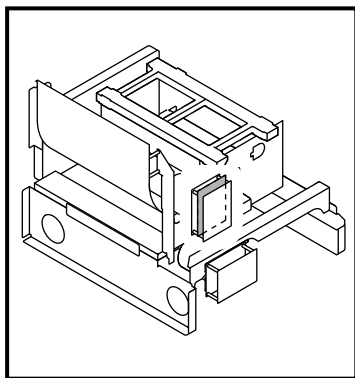
### ● Output image check

Check for image problems.

☞ “9.3 Checking for Image Problems”

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## 10.7 PMT08D Board



FR7H3072.EPS




### CAUTION

*When servicing a PC board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the PC board.*

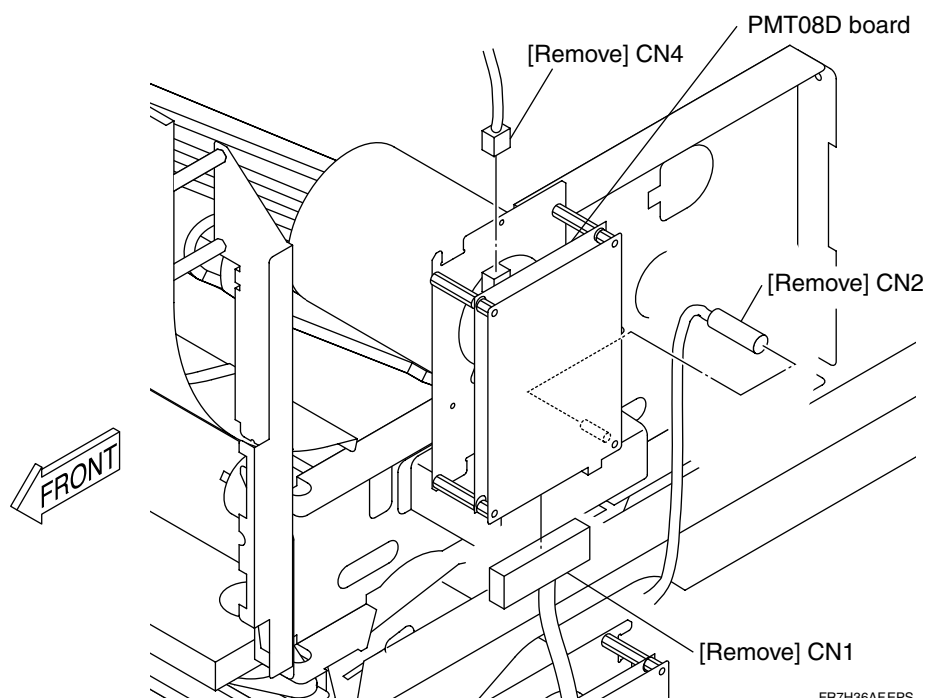
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Right-hand inner cover

 "3. Removing and Installing the Covers"

(2) Disconnect the PMT08D board connectors.

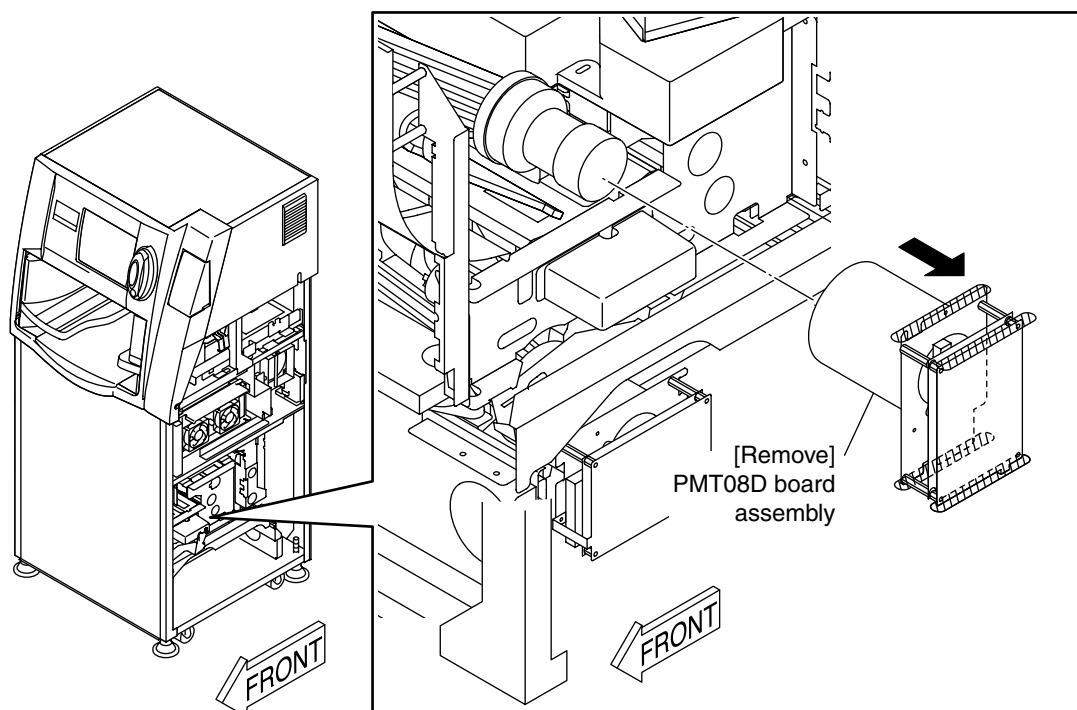


FR7H36AF.EPS

(3) Remove the PMT08D board assembly.

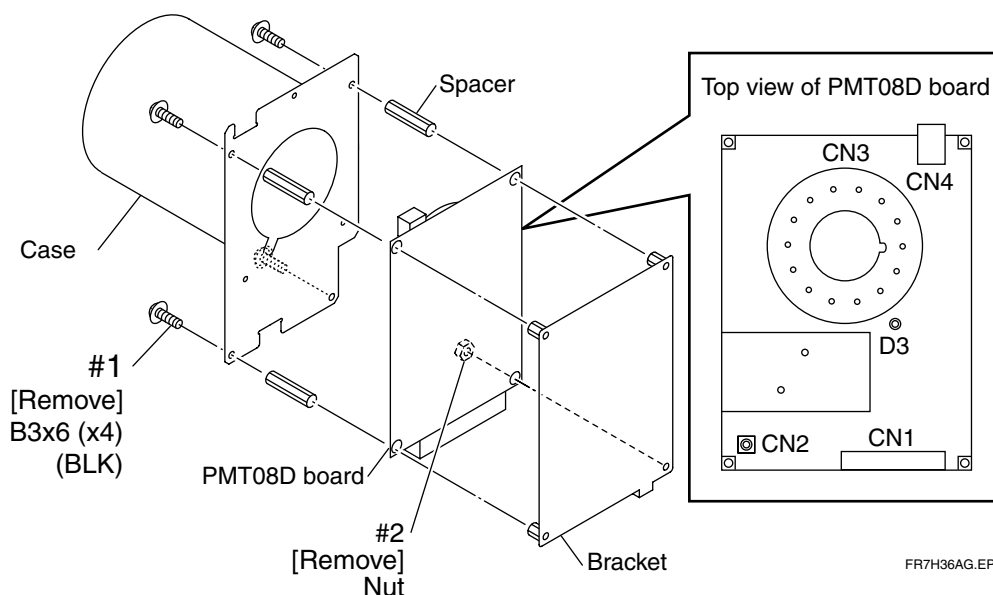
◆ **INSTRUCTION** ◆

*When removing the PMT08D board assembly, hold its shaded portions and pull it square and out as shown in the figure below.*



FR7H3612.EPS

(4) Remove the PMT08D board.



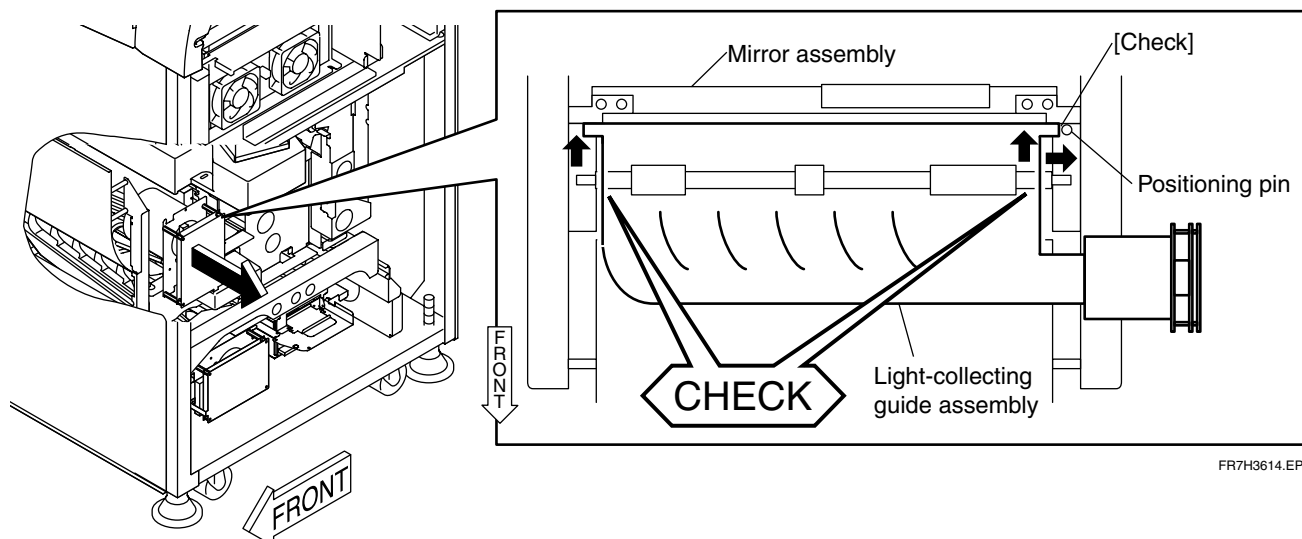
FR7H36AG.EPS

## ■ Installation procedure

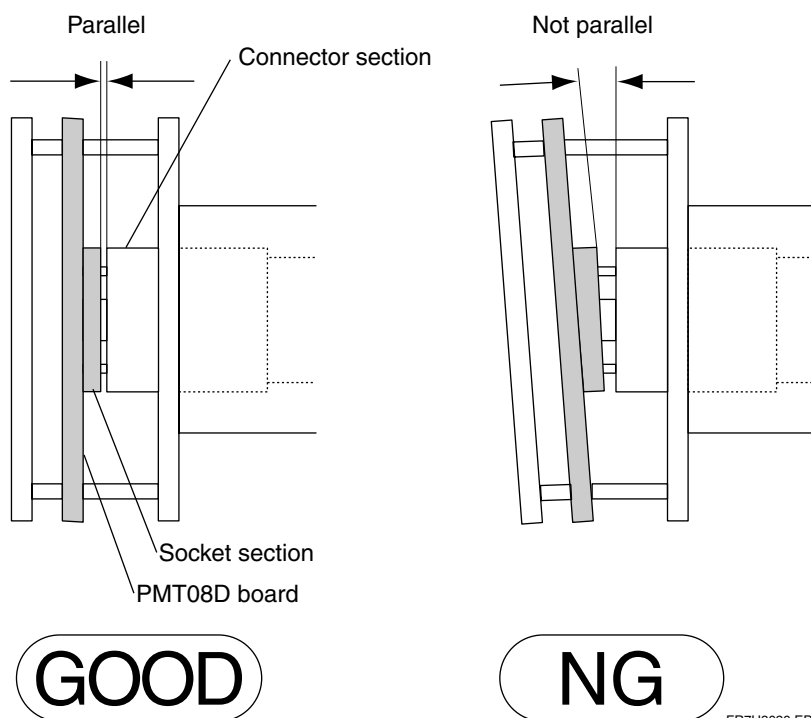
To accomplish installation, reverse the removal procedure.

### ◆ INSTRUCTIONS ◆

- When installing the light-collecting guide assembly, properly position it by pressing it against the mirror assembly and positioning pin.

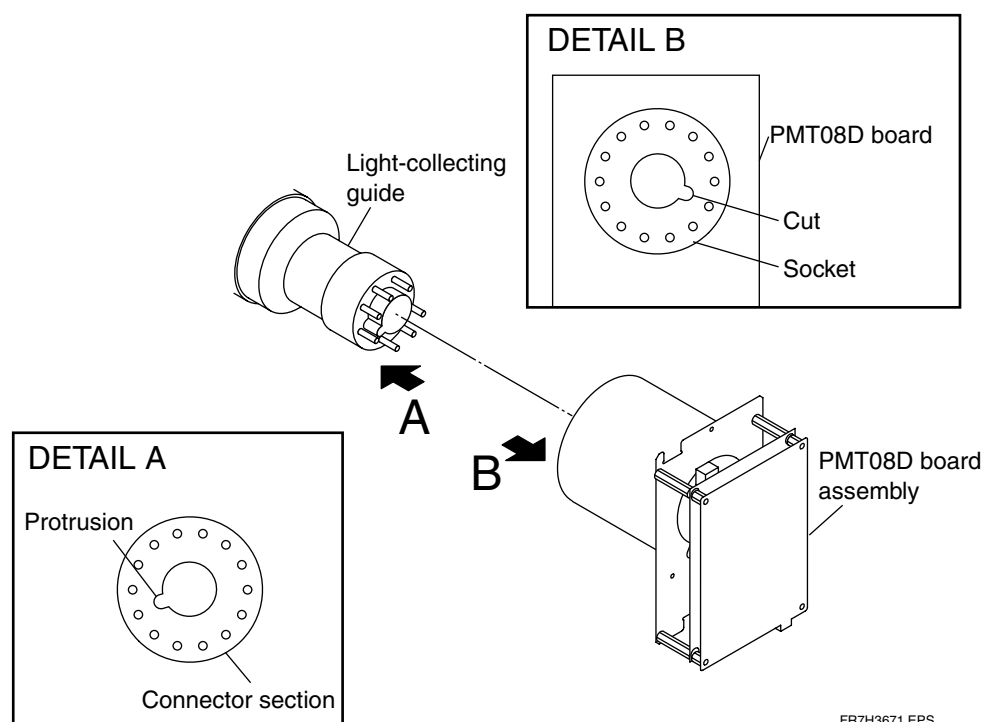


- When mounting the PMT08D board assembly on the light-collecting guide, ensure that the PMT08D board socket section is parallel to the light-collecting guide connector section.



### ◇ REFERENCE ◇

When mounting the PMT08D board assembly on the light-collecting guide, align the light-collecting guide (connector section) protrusion with the cut in the PMT08D board (socket section).



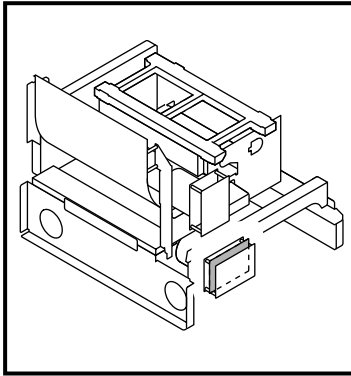
### ■ Check procedure

- Check that the PMT08D board socket section is parallel to the light-collecting guide connector section.
- Check that the light-collecting guide assembly is mounted in the correct position.
- Check for image problems.

☞ “9.3 Checking for Image Problems”



## 10.8 PMR08C Board



FR7H3073.EPS



### CAUTION

*When servicing a PC board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the PC board.*

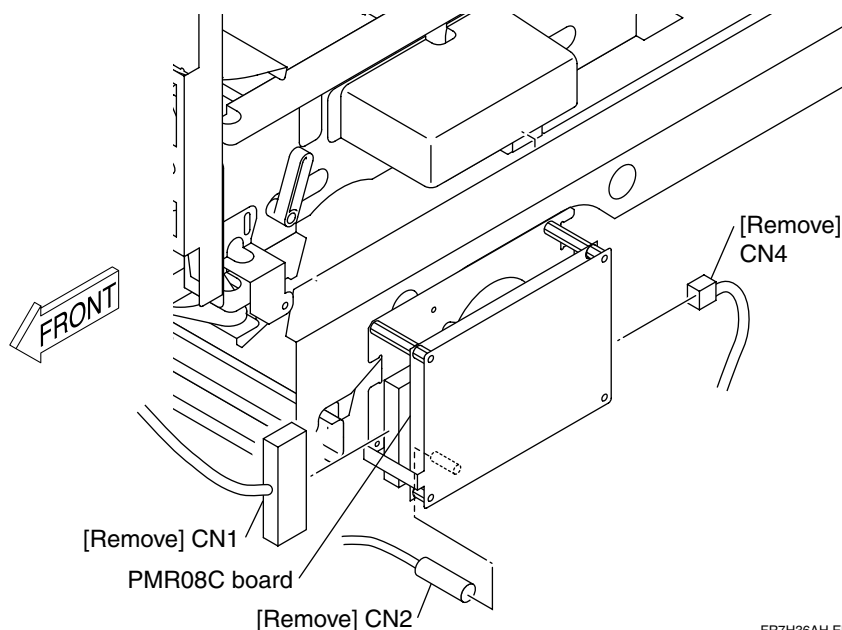
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Right-hand inner cover

☞ “3. Removing and Installing the Covers”

(2) Remove the PMR08C board.

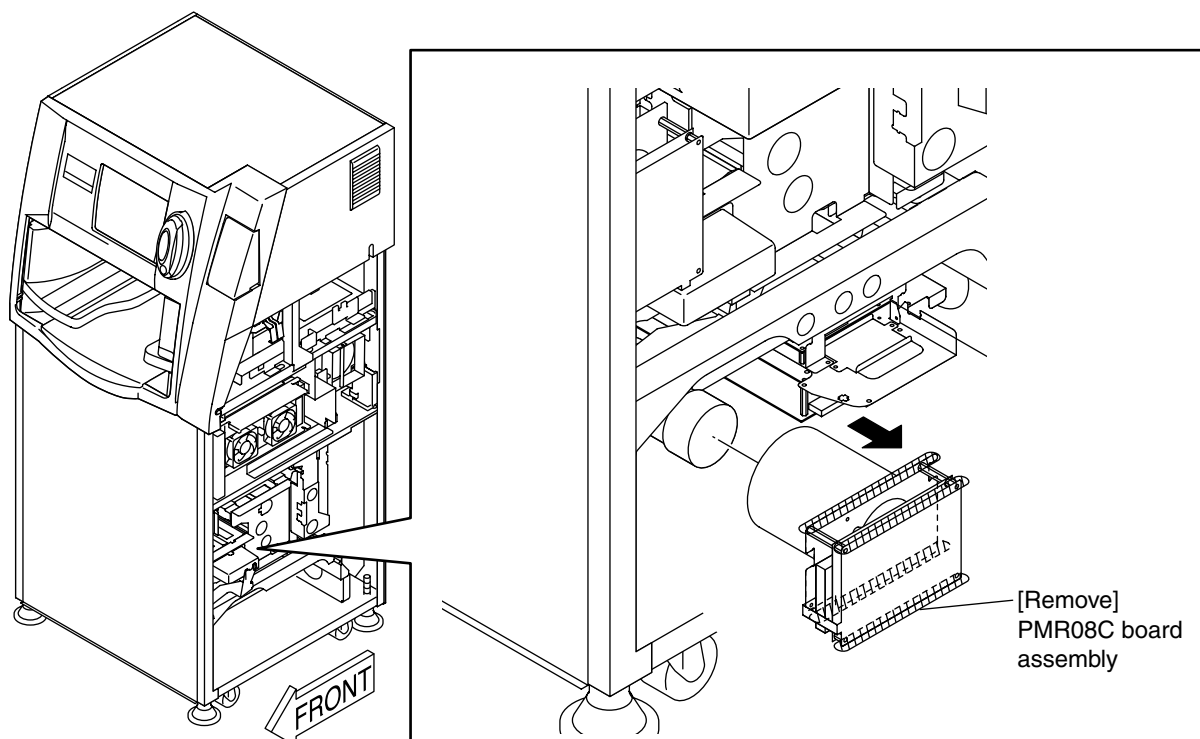


FR7H36AH.EPS

(3) Remove the PMT08C board assembly.

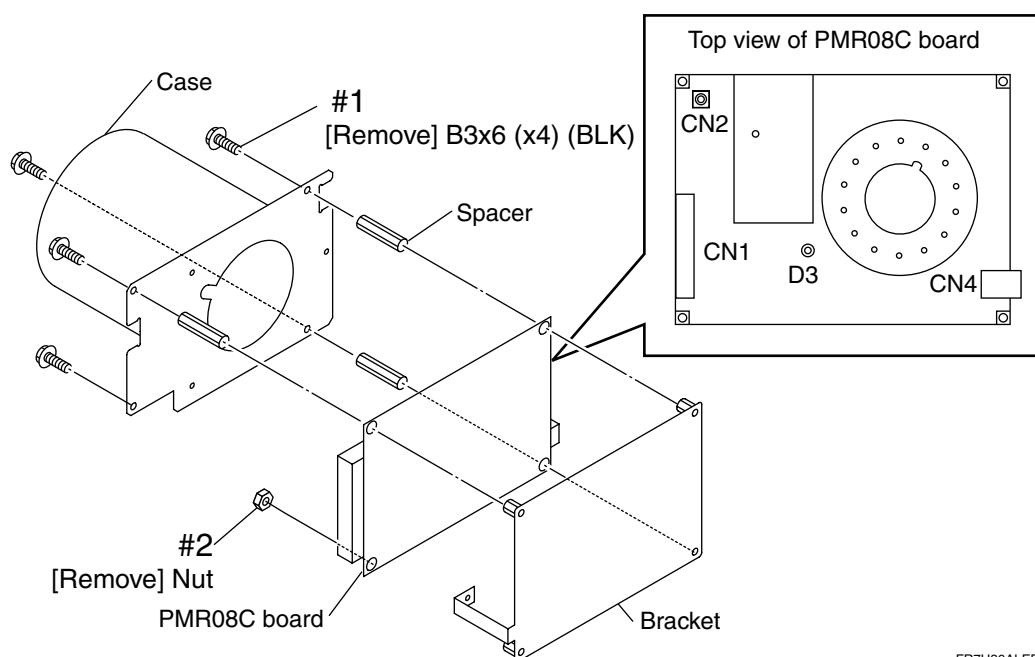
◆ **INSTRUCTION** ◆

*When removing the PMT08C board assembly, hold its shaded portions and pull it square and out as shown in the figure below.*



FR7H3615.EPS

(4) Remove the PMT08C board.



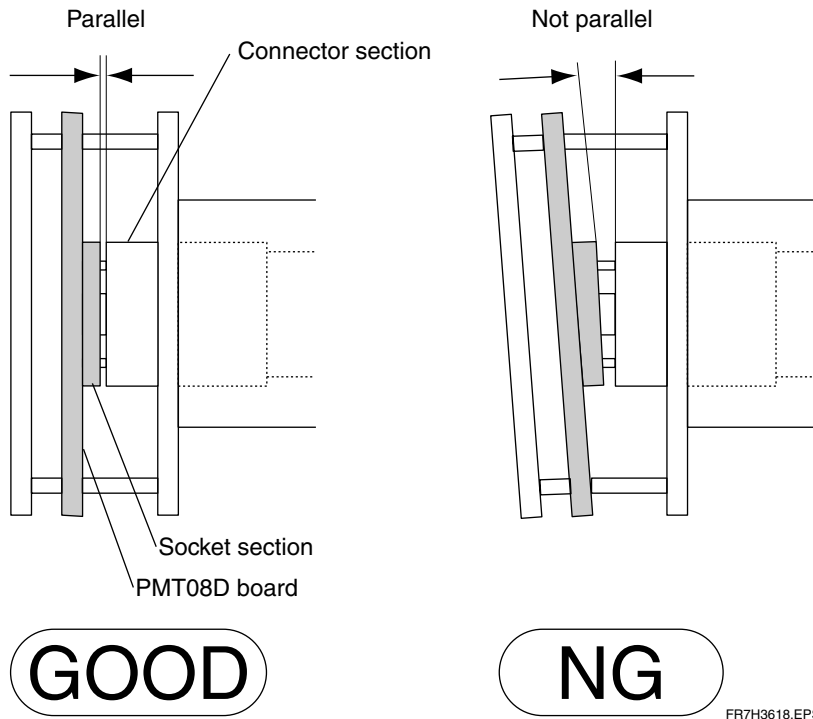
FR7H36A1.EPS

## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

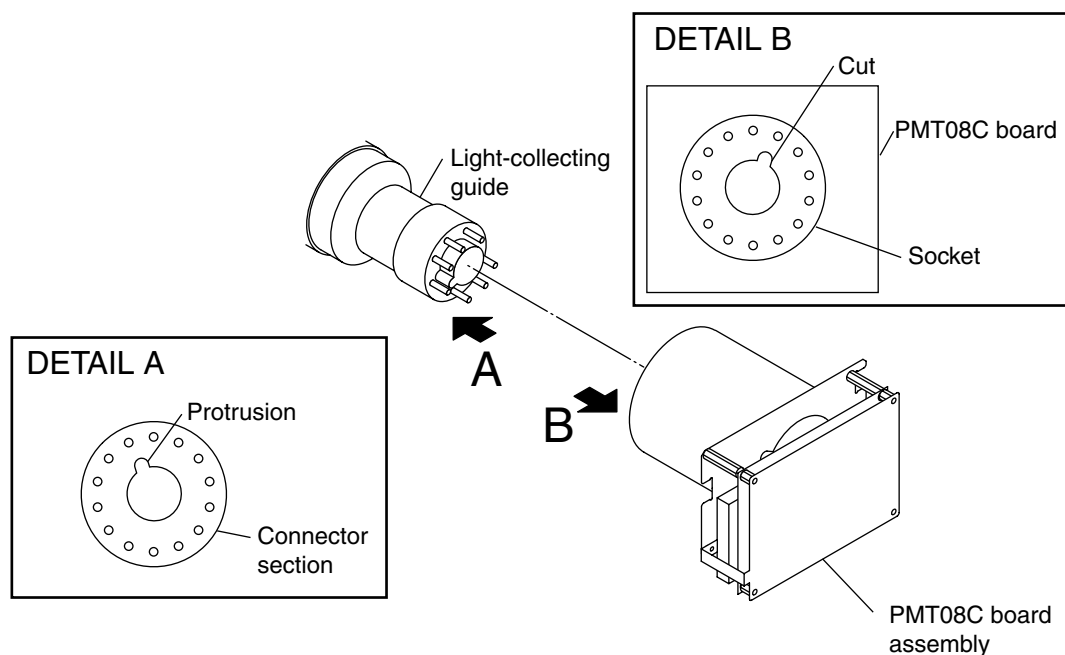
### ◆ INSTRUCTION ◆

*Check that the PMR08C board socket is pushed into the light-collecting guide socket and that these sockets are parallel to each other.*



### ◇ REFERENCE ◇

When mounting the PMR08C board on the light-collecting guide, align the cut in the PMR08C board with the protrusion on the light-collecting guide.



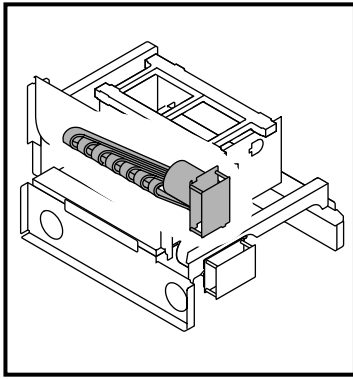
FR7H3633.EPS

### ■ Check/adjustment procedure

- Check that the light-collecting guide assembly is shifted toward the reference surface.
- Check for image problems.

☞ “9.3 Checking for Image Problems”

## 10.9 Light-Collecting Guide Assembly (for Front Surface)



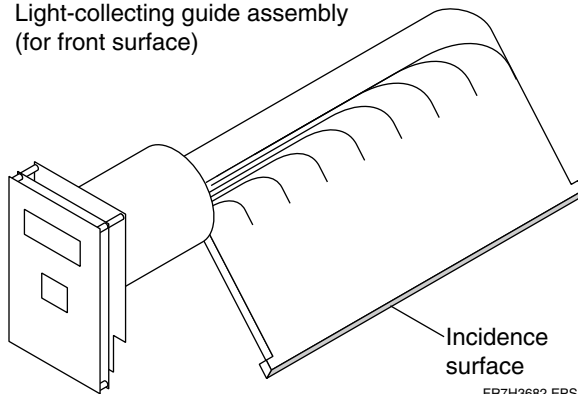
FR7H3074.EPS



### **CAUTION**

*Never touch the incidence surface of the light-collecting guide even when you wear gloves.*

Light-collecting guide assembly  
(for front surface)



FR7H3682.EPS

### ◆ **INSTRUCTION** ◆

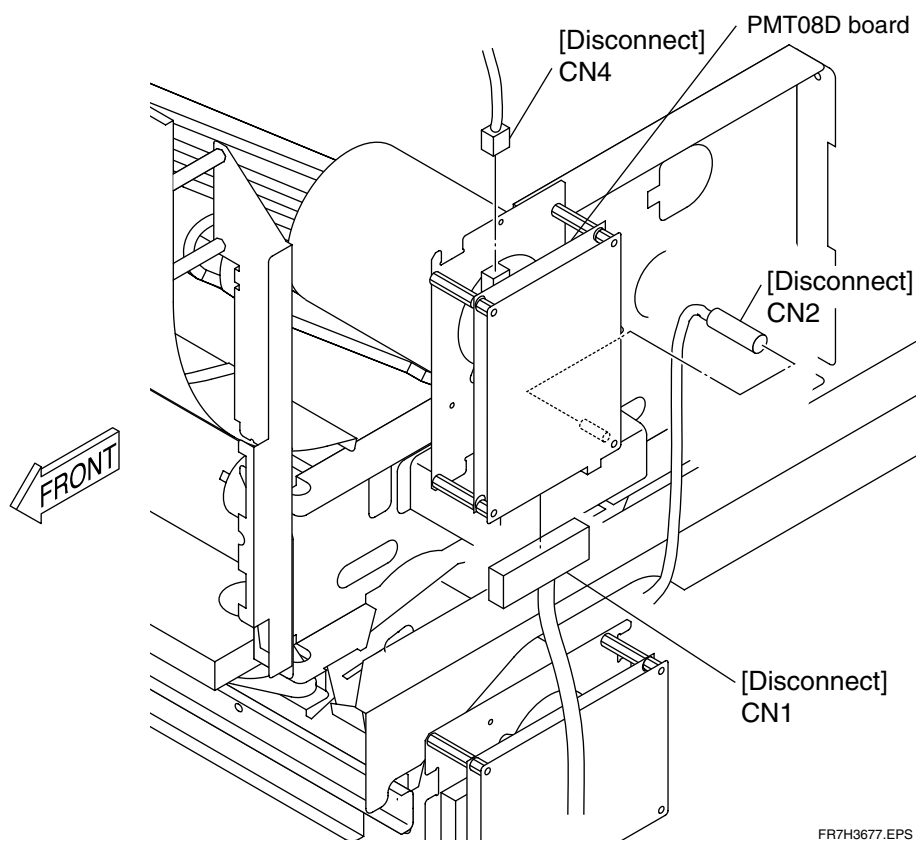
*When handling the light-collecting guide assembly, wear gloves.*

### ■ **Removal procedure**

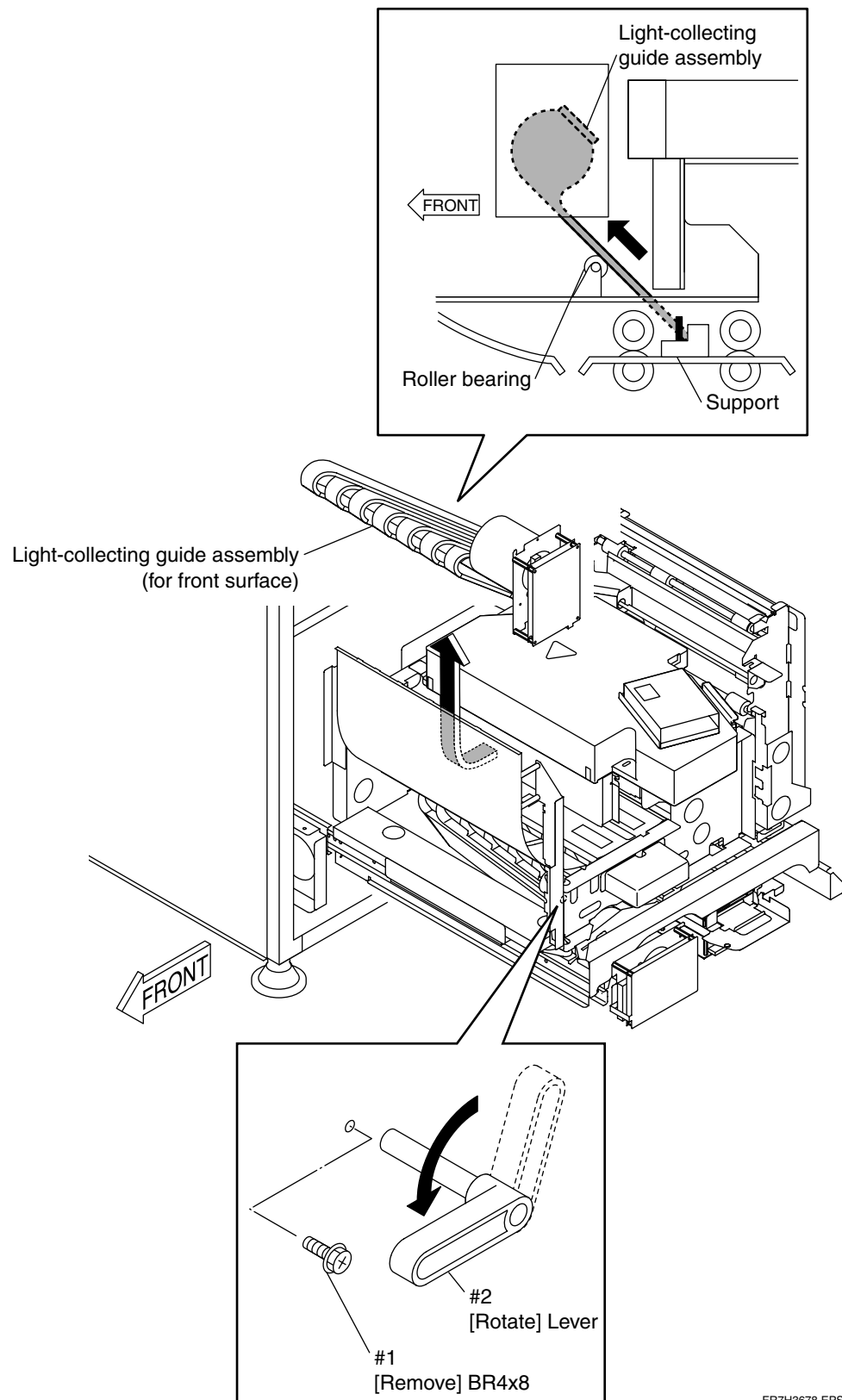
- (1) Pull out the scanner unit.

☞ “7. Pulling Out and Pushing In the Scanner Unit”

(2) Disconnect the PMT08D board connectors.



(3) Remove the light-collecting guide assembly (for front surface).

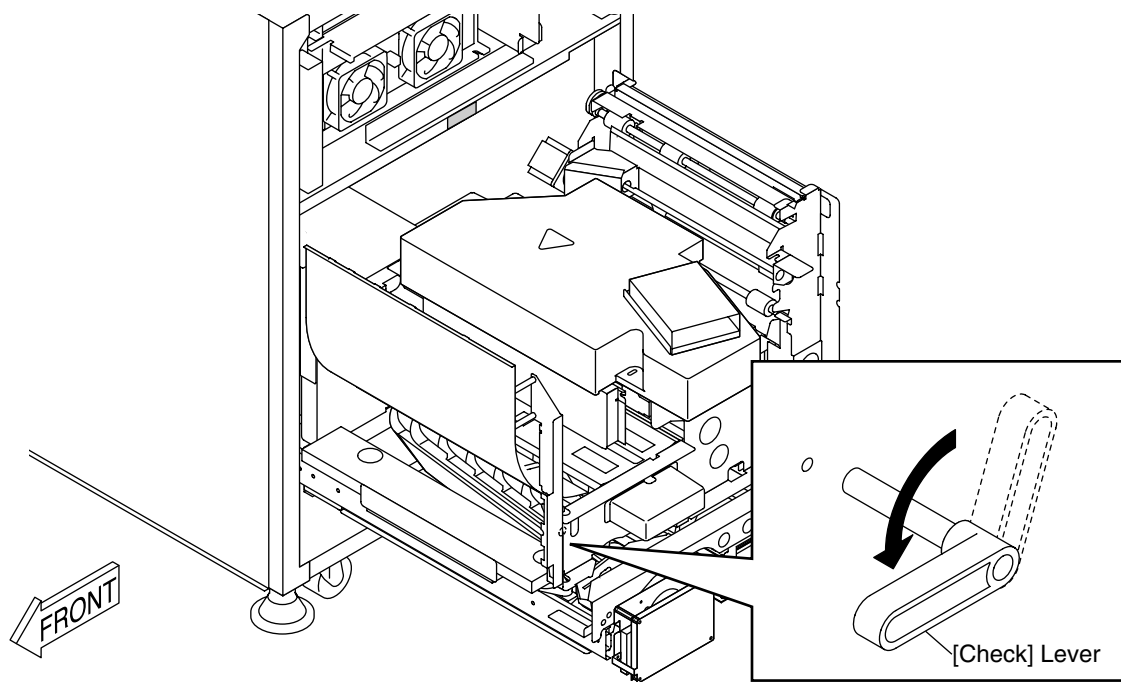


FR7H3678.EPS

## ■ Installation procedure

### ◆ NOTE ◆

*Before installing the light-collecting guide assembly, verify that the lever is positioned as indicated by the arrow in the figure below.*



FR7H3620.EPS

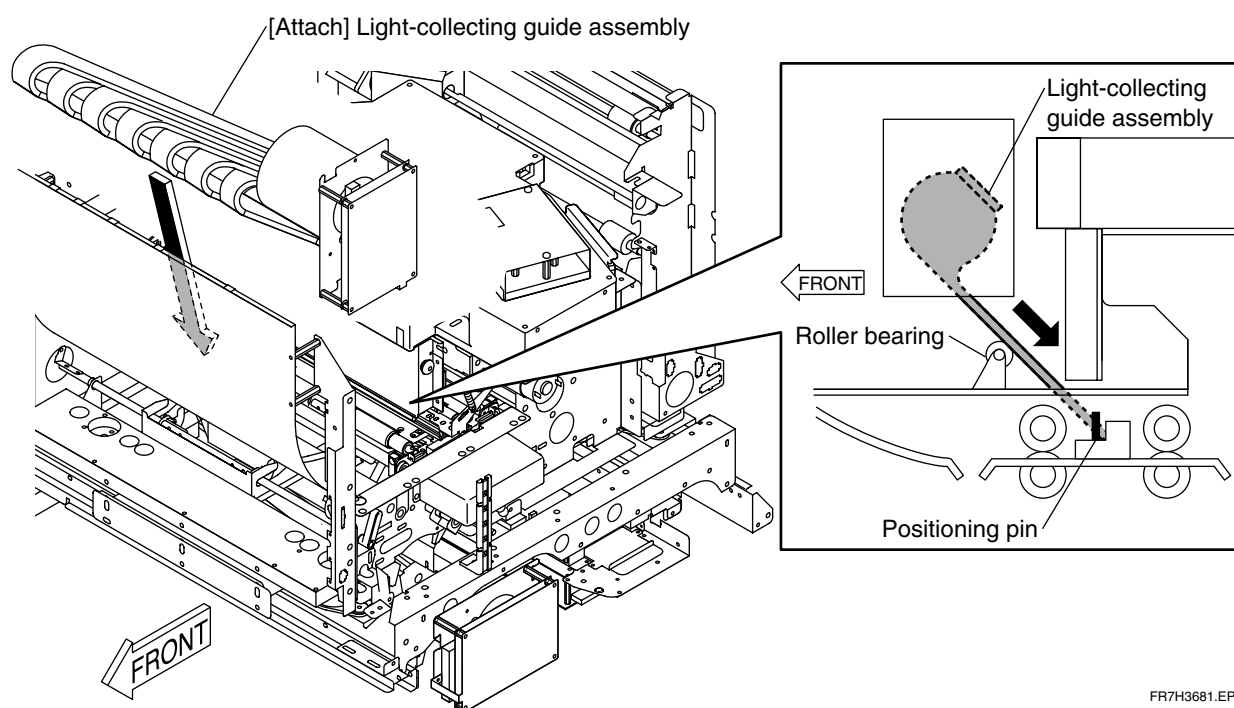
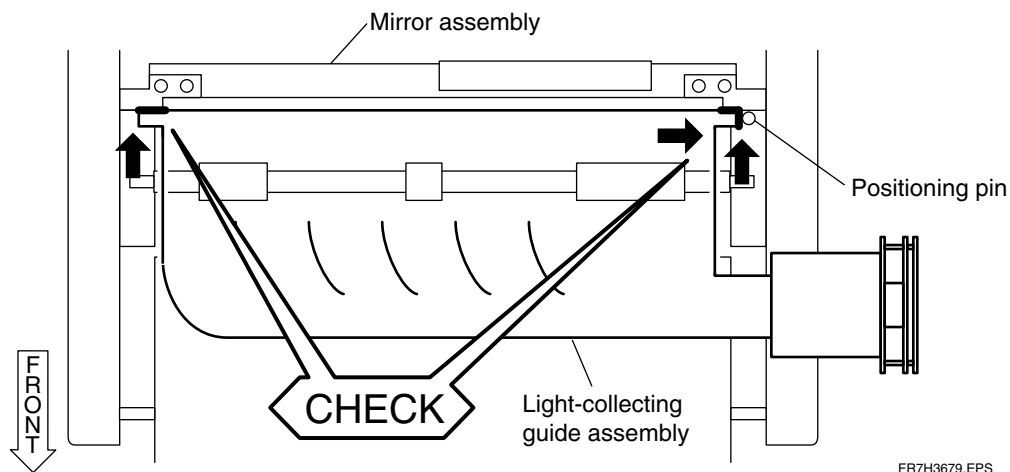


## ■ Installation procedure

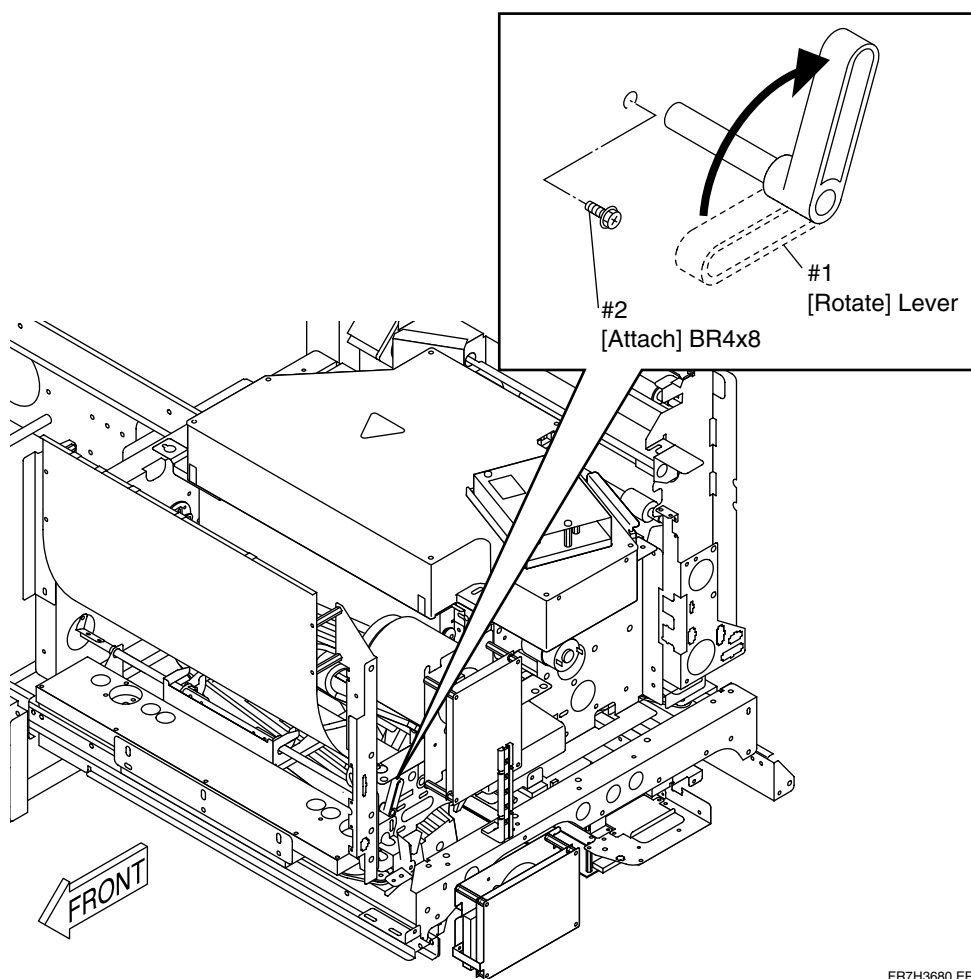
- (1) Install the light-collecting guide assembly (for front surface).

### ◆ INSTRUCTION ◆

*When installing the light-collecting guide assembly, properly position it by pressing it against the mirror assembly and positioning pin.*

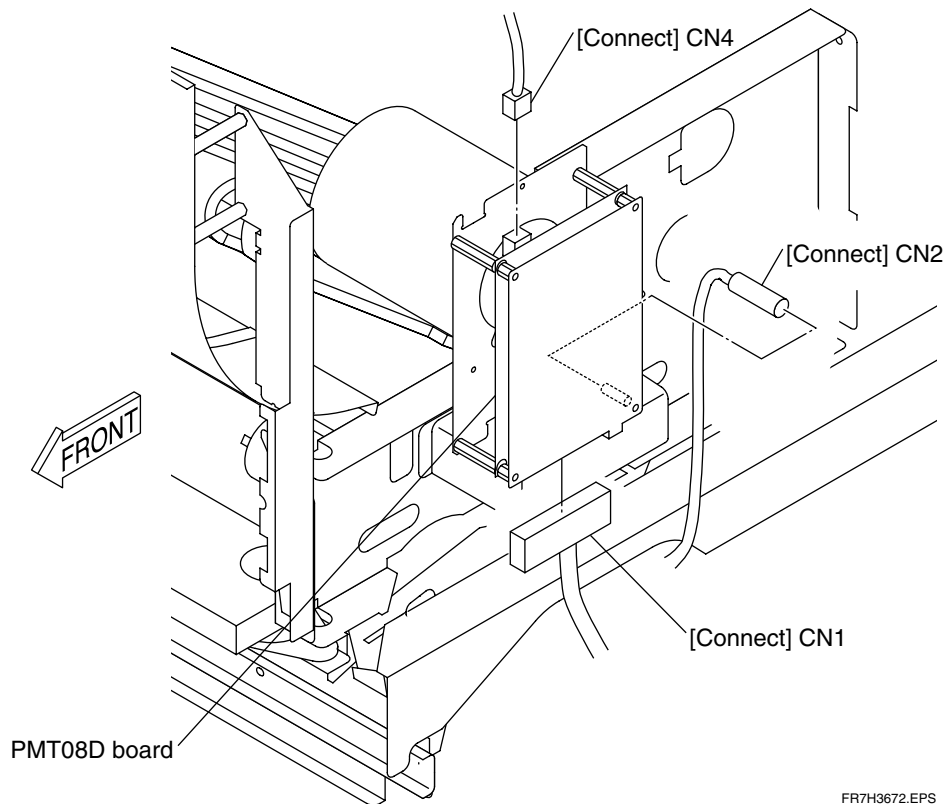


- (2) Rotate the lever in the direction of the arrow in the figure below and then screw down the light-collecting guide assembly.



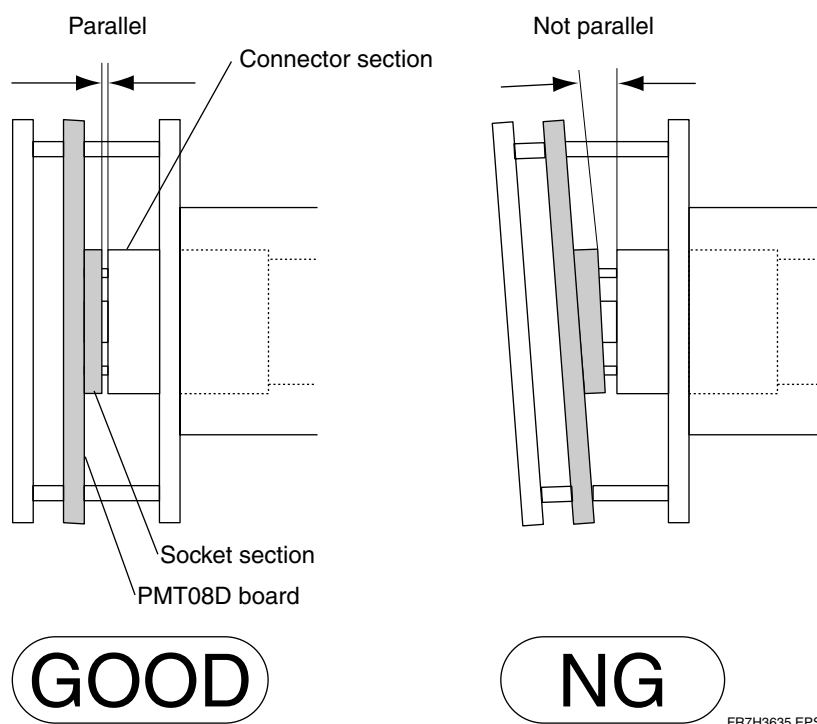
FR7H3680.EPS

(3) Connect the PMT08D board connectors.



## ■ Check/adjustment procedure

- Check that the light-collecting guide assembly is mounted in the correct position.
- Check that the PMT08D board socket section is parallel to the light-collecting guide connector section.



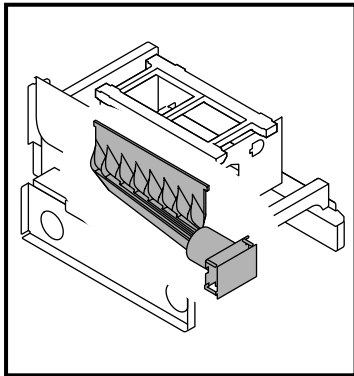
## ◆ INSTRUCTION ◆

*After light-collecting guide assembly replacement, make shading/sensitivity corrections.*

☞ “9.2 Shading and Sensitivity Corrections”

- Check for image problems.  
☞ “9.3 Checking for Image Problems”

## 10.10 Light-Collecting Guide Assembly (for Back Surface)



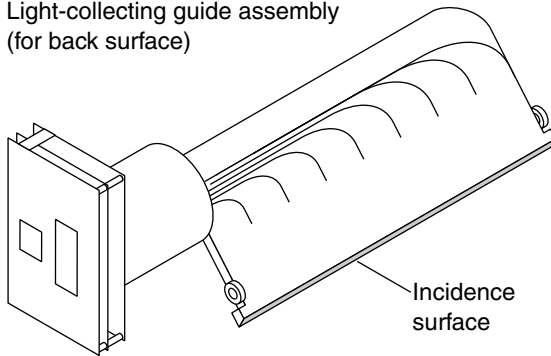
FR7H3075.EPS



### CAUTION

*Never touch the incidence surface of the light-collecting guide even when you wear gloves.*

Light-collecting guide assembly  
(for back surface)




FR7H3686.EPS

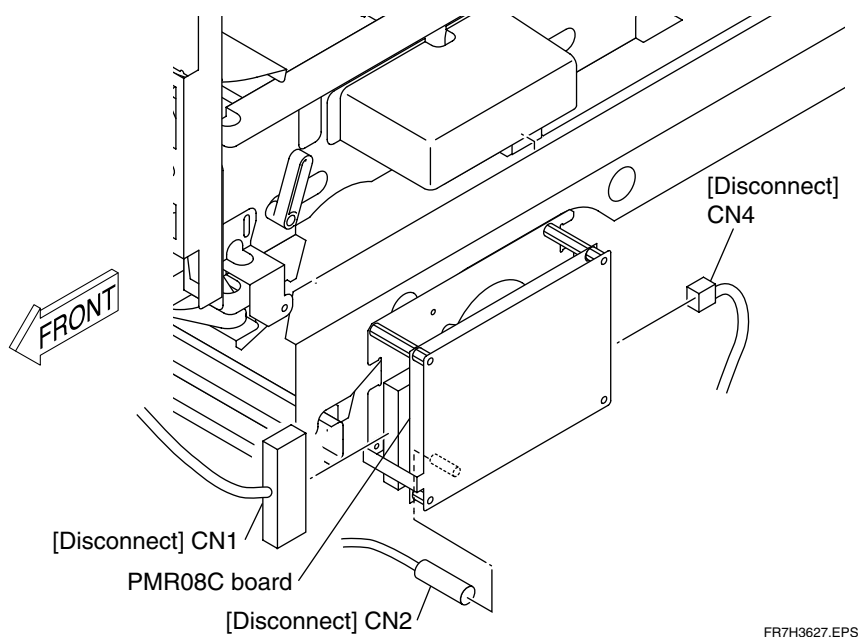
### ◆ INSTRUCTION ◆

*When handling the light-collecting guide assembly, wear gloves.*

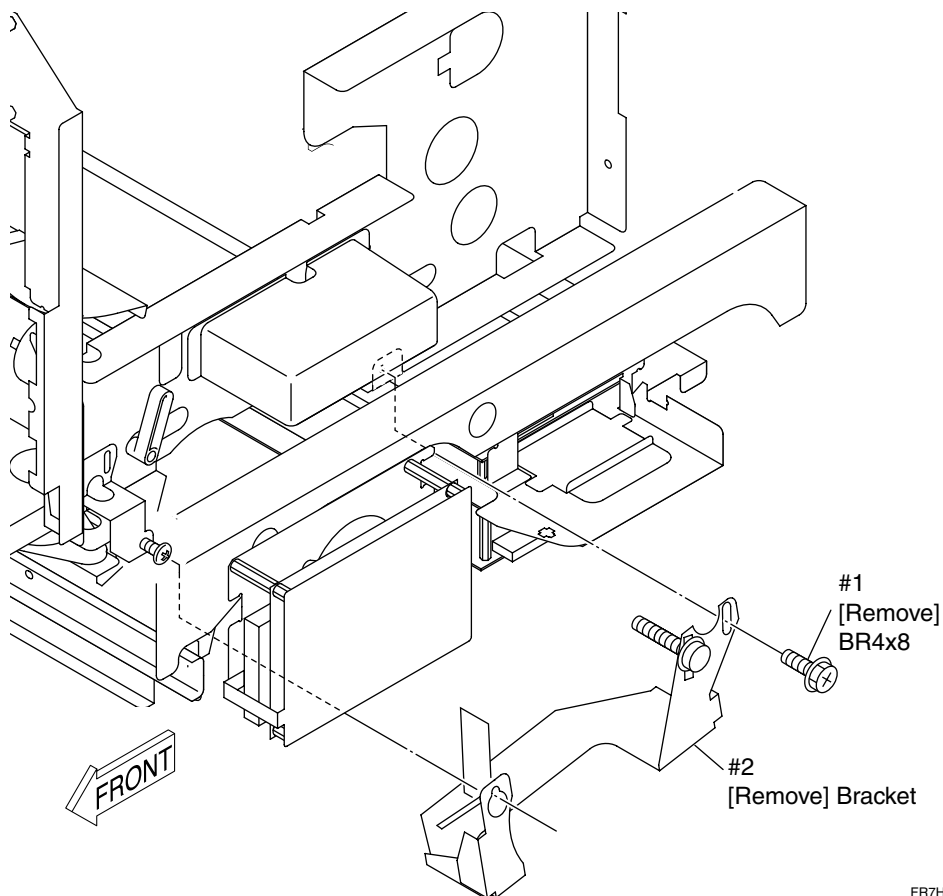
### ■ Removal procedure

- (1) Pull out the scanner unit.  
 "7. Pulling Out and Pushing In the Scanner Unit"

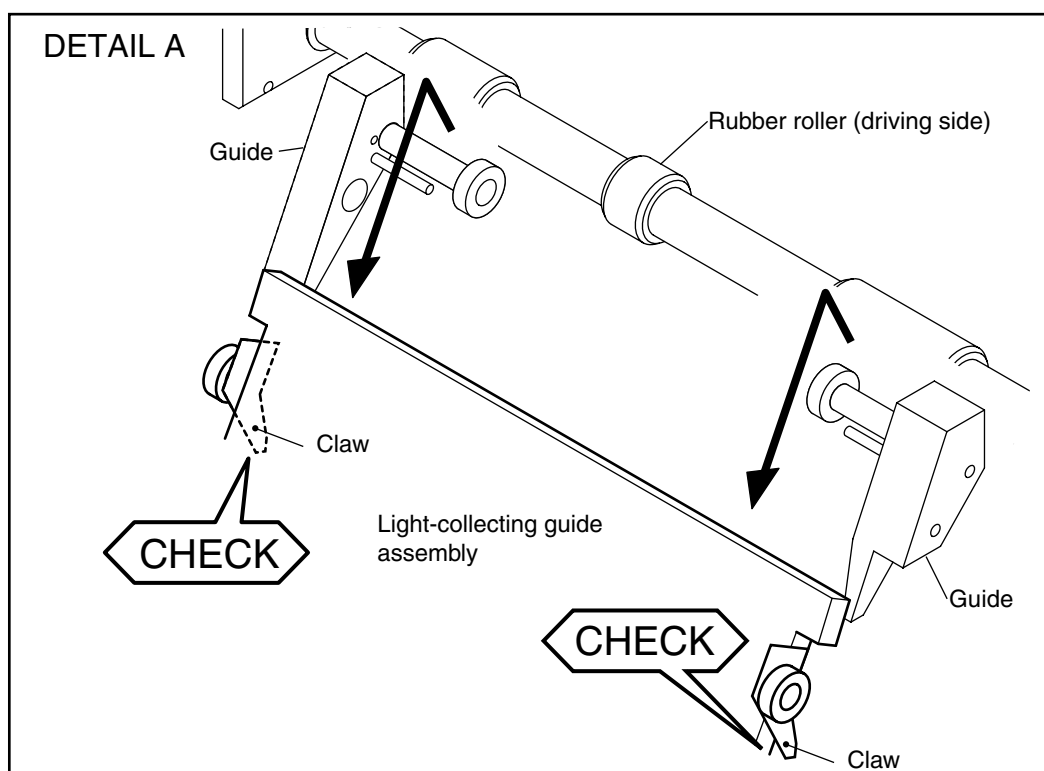
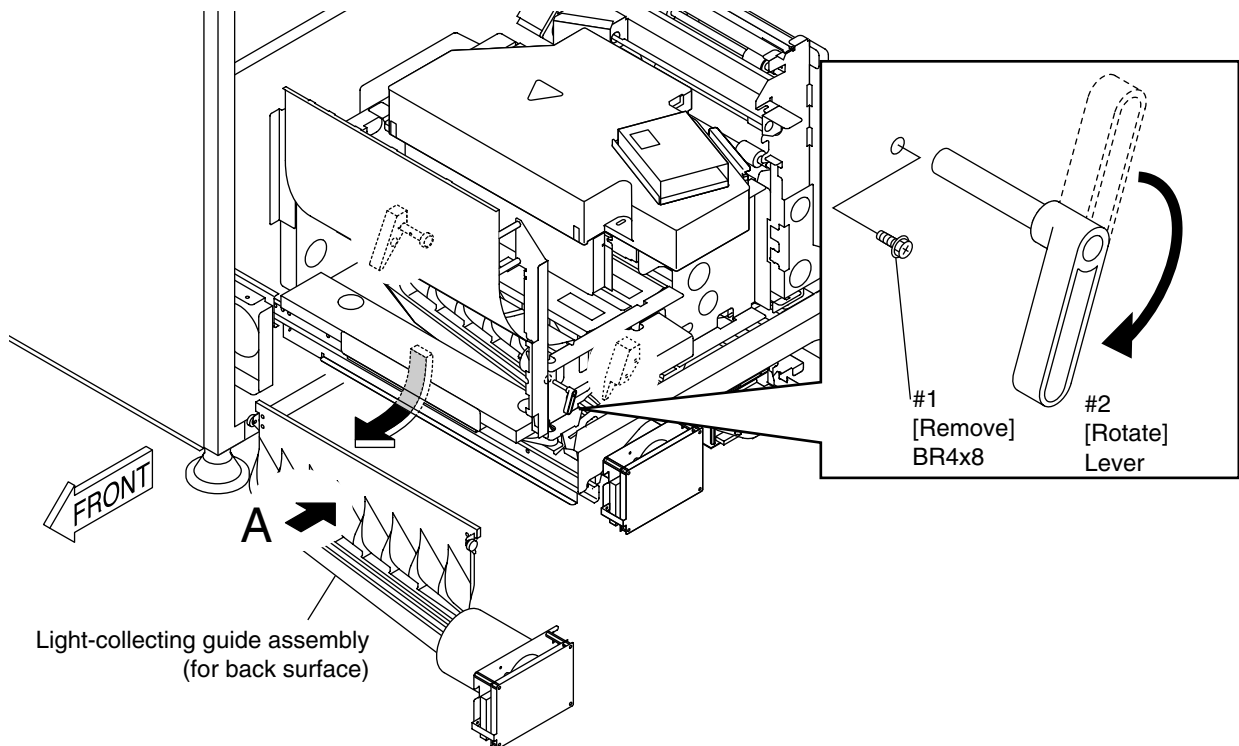
(2) Disconnect the PMR08C board connectors.



(3) Remove the bracket.



## (4) Remove the light-collecting guide assembly (for back surface)



FR7H3619.EPS

## ■ Installation procedure

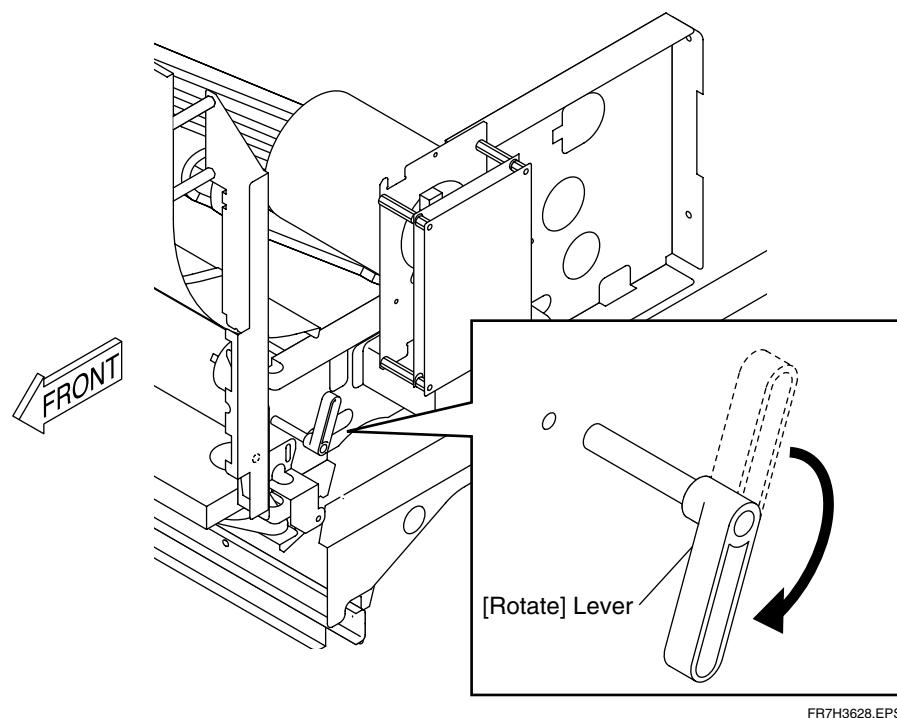
### ◆ NOTE ◆

*When replacing the light-collecting guide assembly (for back surface) with a new one, it is necessary to adjust the mounting position with the bracket. Also, follow the specified procedure for the light-collecting guide assembly (for back surface) replacement.*

## ● Removing/installing the light-collecting guide assembly

### ◆ NOTE ◆

*Before installing the light-collecting guide assembly, make sure that the lever is positioned as indicated by the arrow in the figure below.*

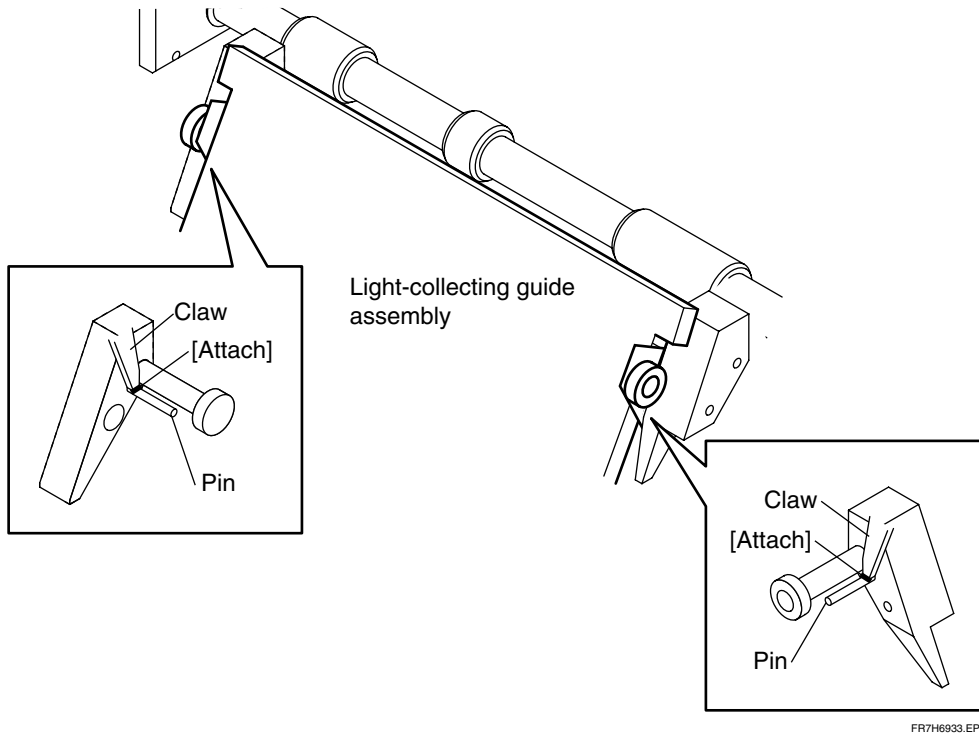


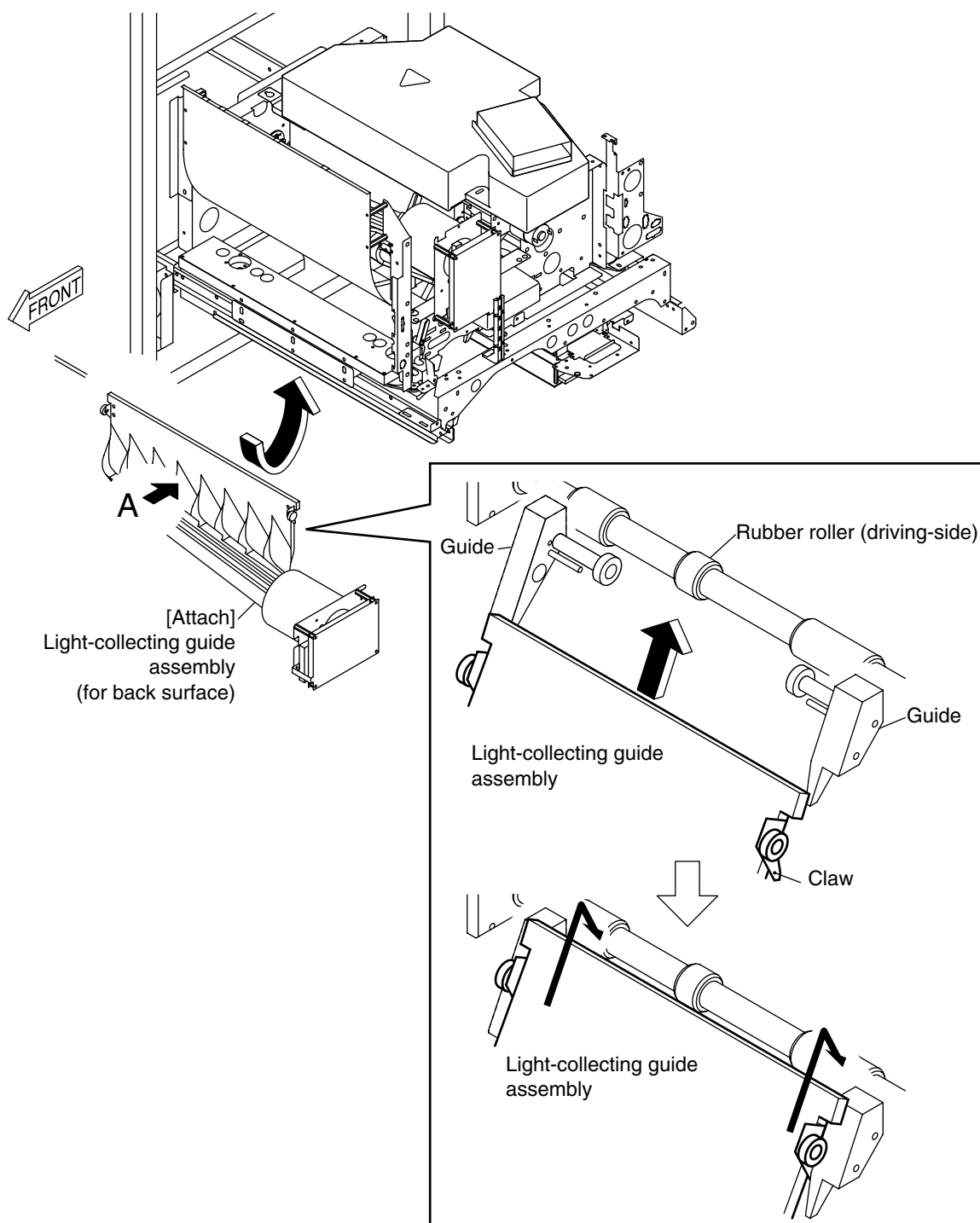


- (1) Install the light-collecting guide assembly (for back surface).

◆ **NOTE** ◆

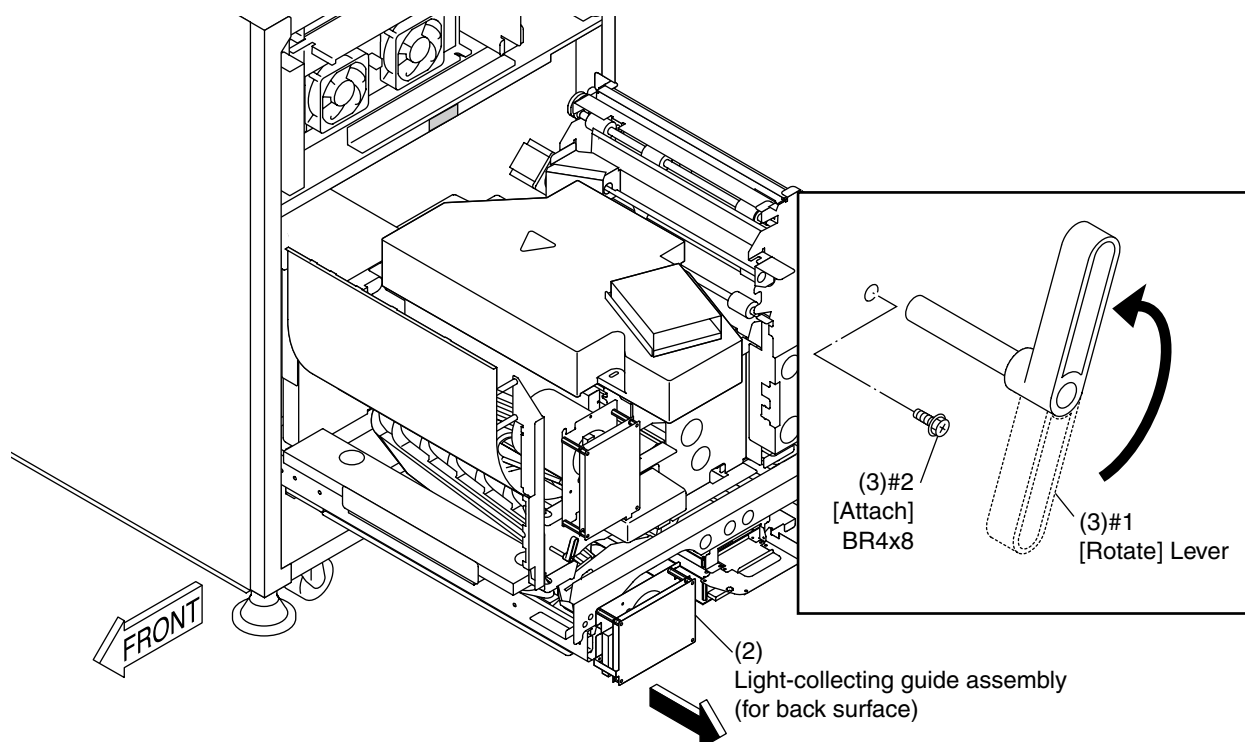
*When installing the light-collecting guide assembly, ensure that its claws are positioned above the guide pins.*





FR7H36AK.EPS

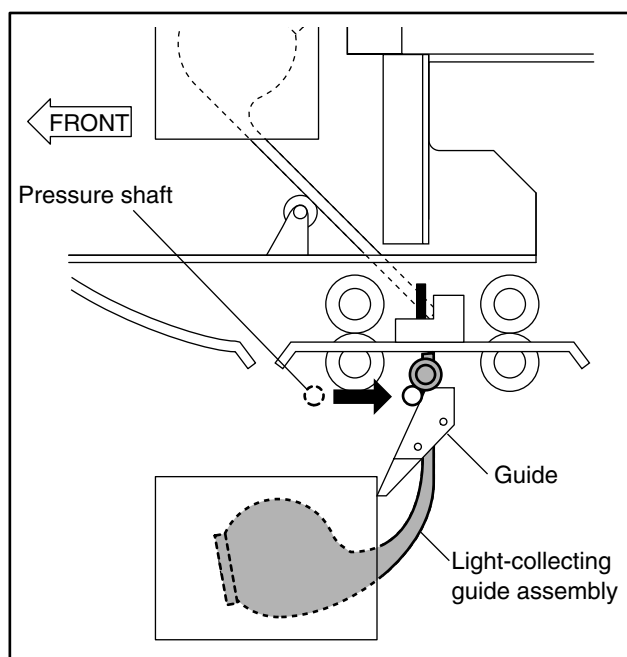
- (2) Shift the light-collecting guide assembly (for back surface) toward the reference section.
- (3) Rotate the lever in the direction of the arrow in the figure below to secure the light-collecting guide assembly (for back surface).



FR7H3629.EPS

### ◇ REFERENCE ◇

*Rotating the lever causes the pressure shaft to secure the light-collecting guide.*

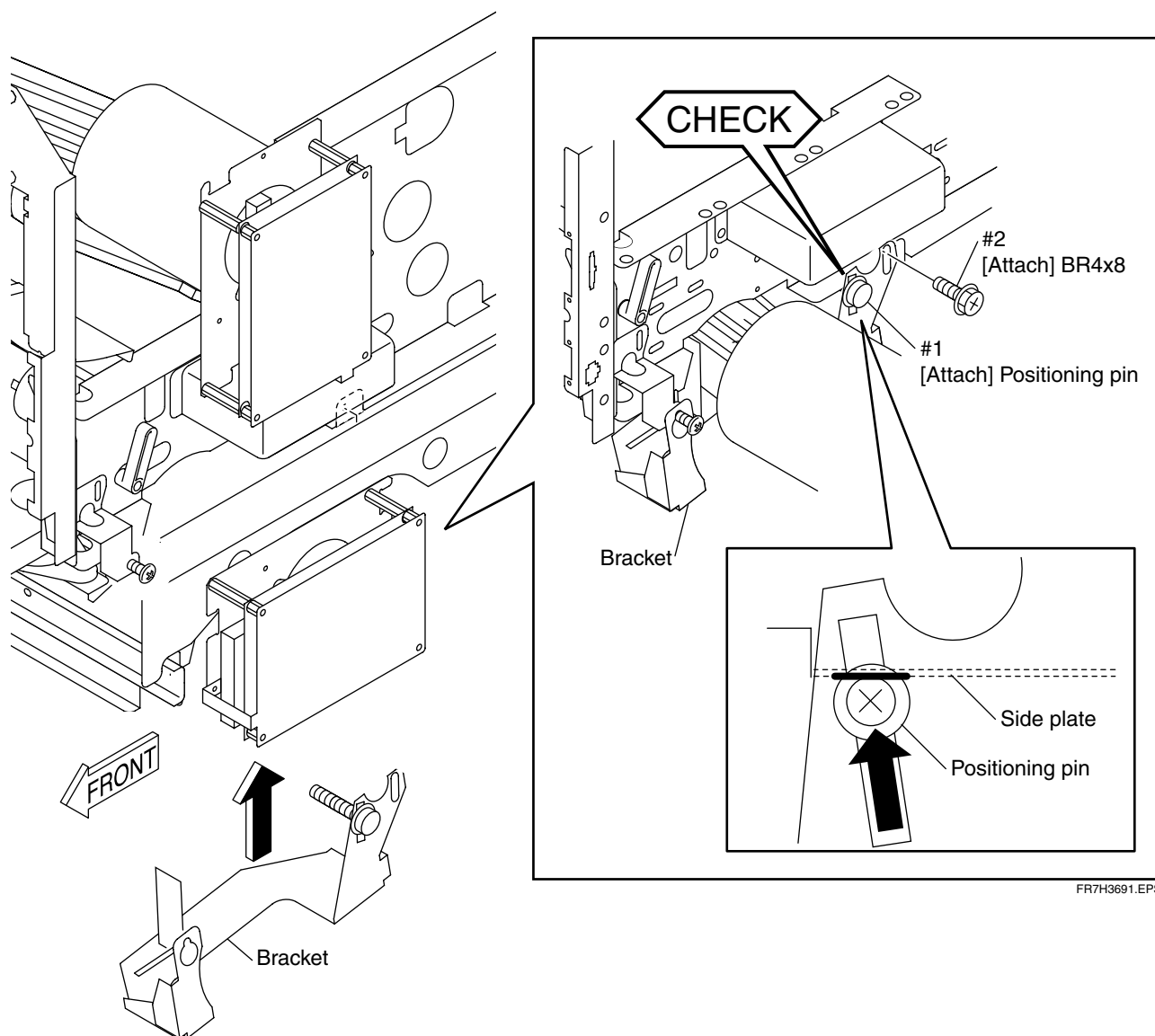


FR7H3690.EPS

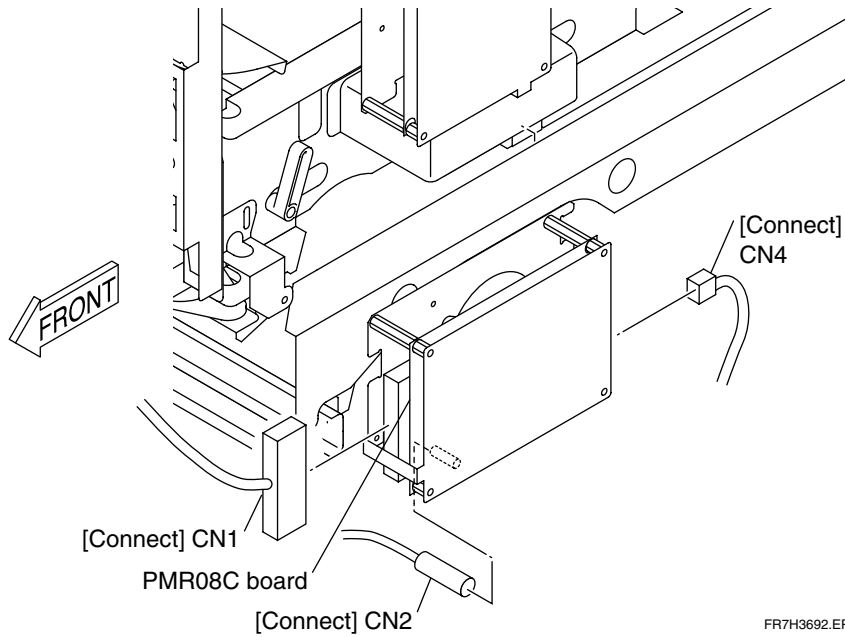
(4) Mount the bracket in position.

◆ **INSTRUCTION** ◆

*When installing the bracket, secure it while pressing its positioning screw against the side plate.*



(5) Connect the PMR08C board connectors.



### ■ Check/adjustment procedure

- Check that the bracket positioning screw is in contact with the side plate.
- Check for image problems.

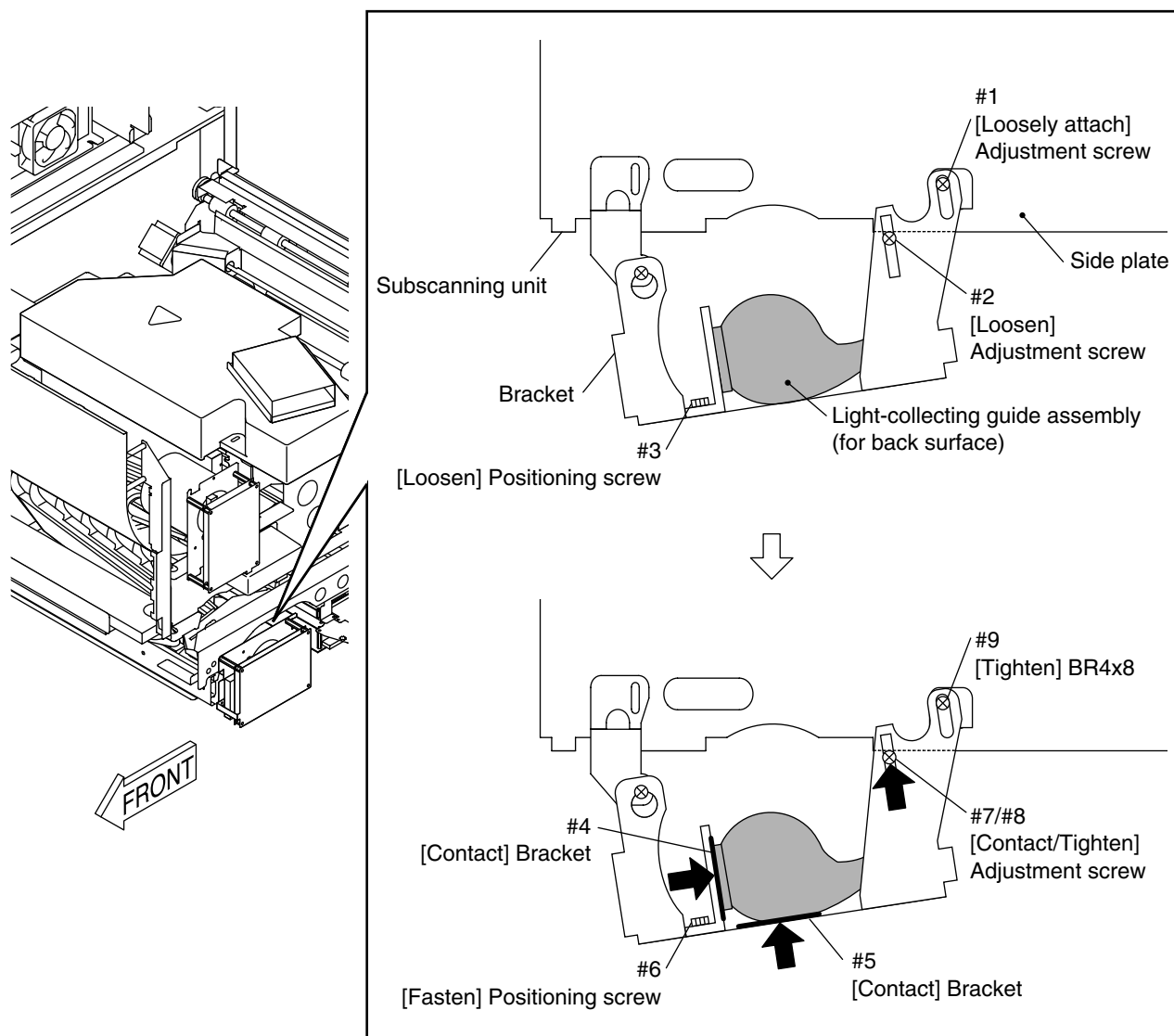
☞ "9.3 Checking for Image Problems"

## ● After the light-collecting guide assembly is replaced with a new one

- (1) Rotate the lever to secure the light-collecting guide assembly (for back surface). Note that the assembly is not to be screwed down (BR4x8).

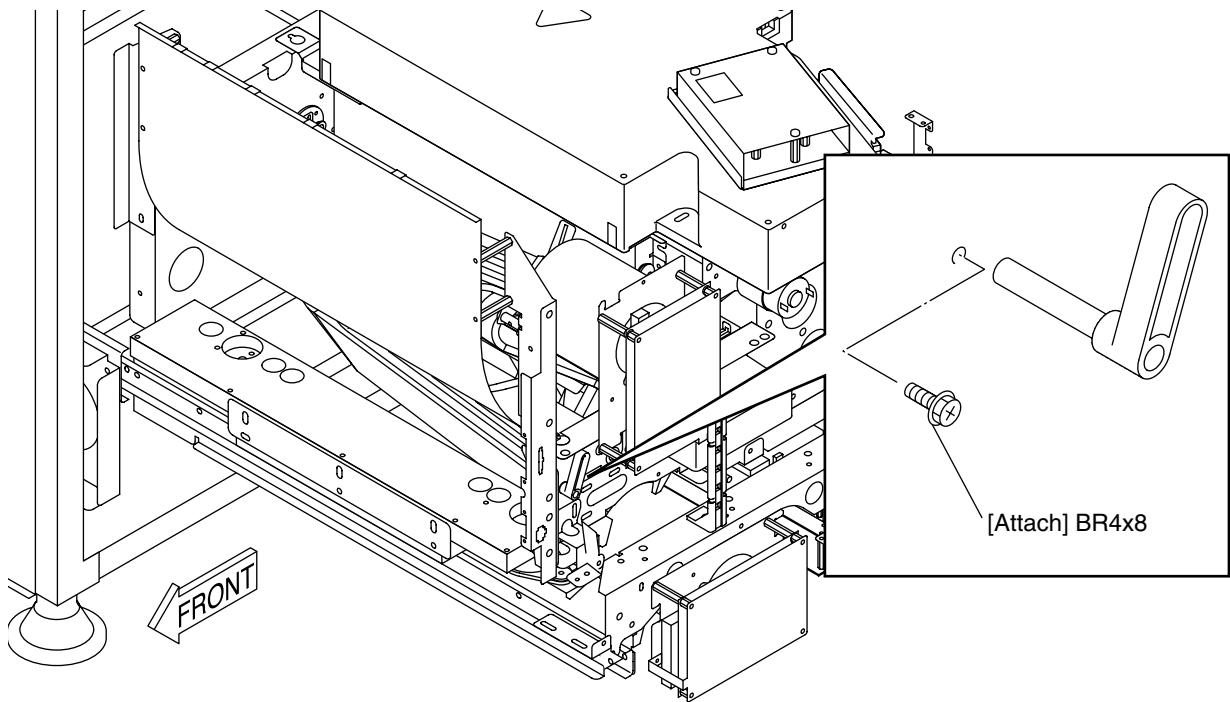
☞ Steps (1) through (3) under “● Removing/installing the light-collecting guide assembly”

- (2) Reposition the bracket as needed and then secure it.



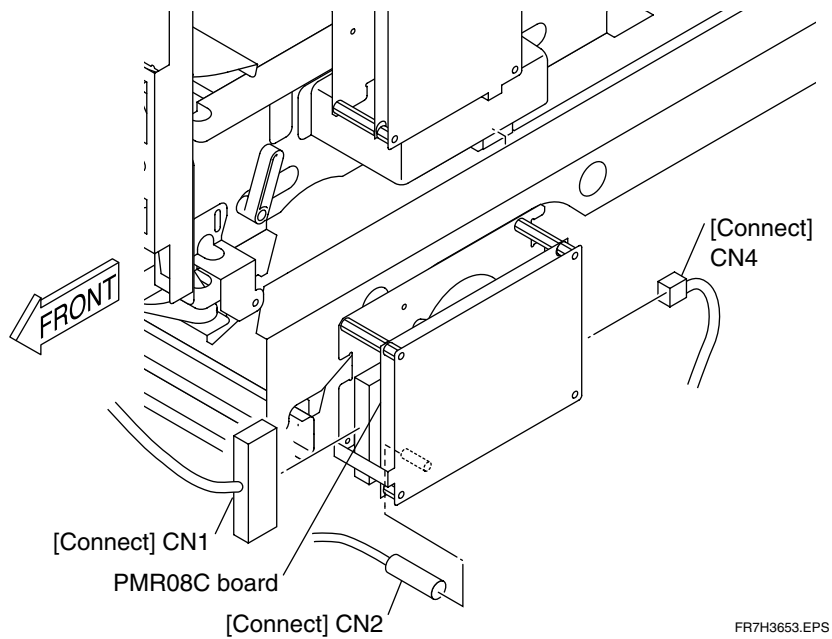
FR7H3634.EPS

(3) Secure the lever.



FR7H3630.EPS

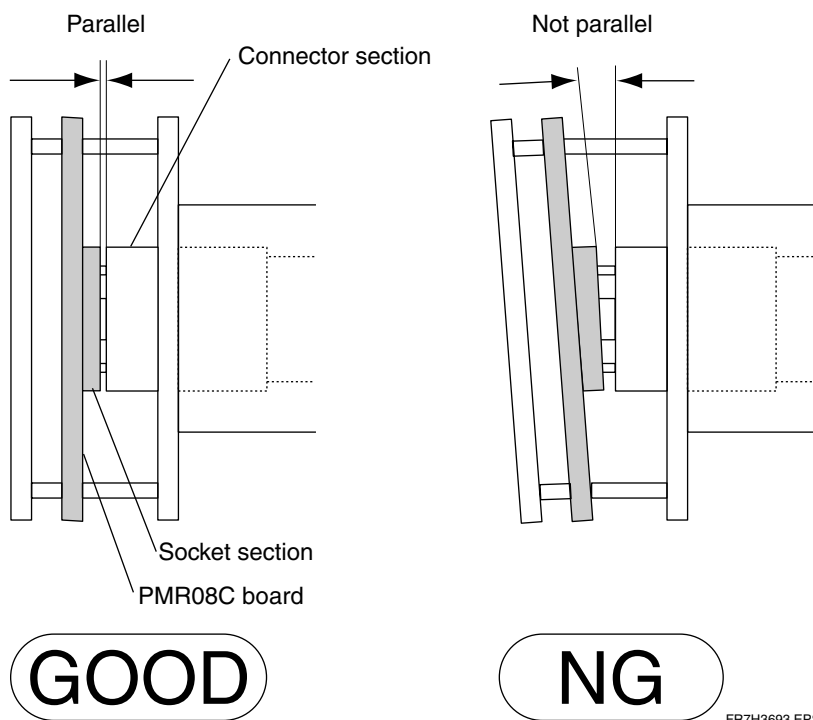
(4) Connect the PMR08C board connectors.



FR7H3653.EPS

## ■ Check/adjustment procedure

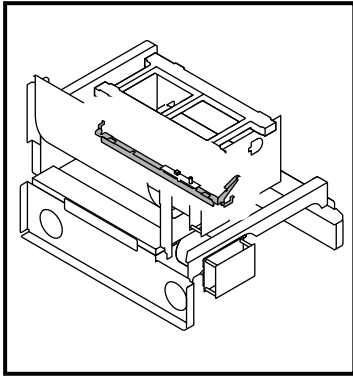
- Check that the PMR08C board socket section is parallel to the light-collecting guide connector section.



- Check that the light-collecting guide assembly is mounted in the correct position.
- Make shading/sensitivity corrections.
  - ☞ “9.2 Shading and Sensitivity Corrections”
- Check for image problems.
  - ☞ “9.3 Checking for Image Problems”



## 10.11 Light-Collecting Mirror and IP Leading-Edge Sensor (SZ1/SED08D)



FR7H3077.EPS



### **CAUTION**

*Do not touch the reflection face of the light-collecting mirror even when you wear gloves.*

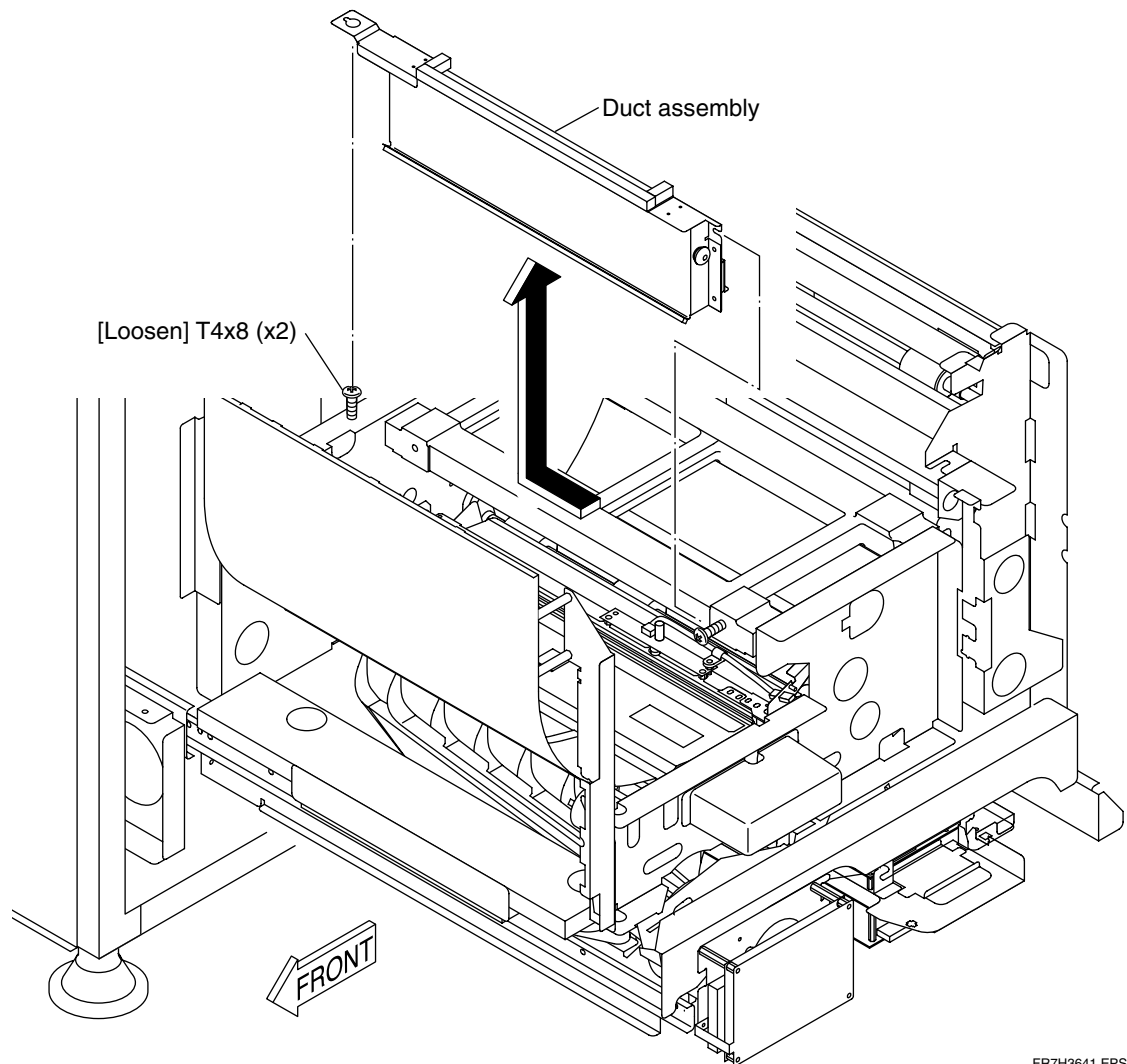
### **◆ INSTRUCTION ◆**

*Wear gloves when handling the light-collecting mirror.*

### ■ Removal procedure

- (1) Remove the light-collecting guide assembly (for front surface).  
☞ “10.10 Light-Collecting Guide Assembly (for Front Surface)”
- (2) Remove the scanning optics unit.  
☞ “9.4 Removing and Installing the Scanning Optics Unit”

(3) Remove the duct assembly.

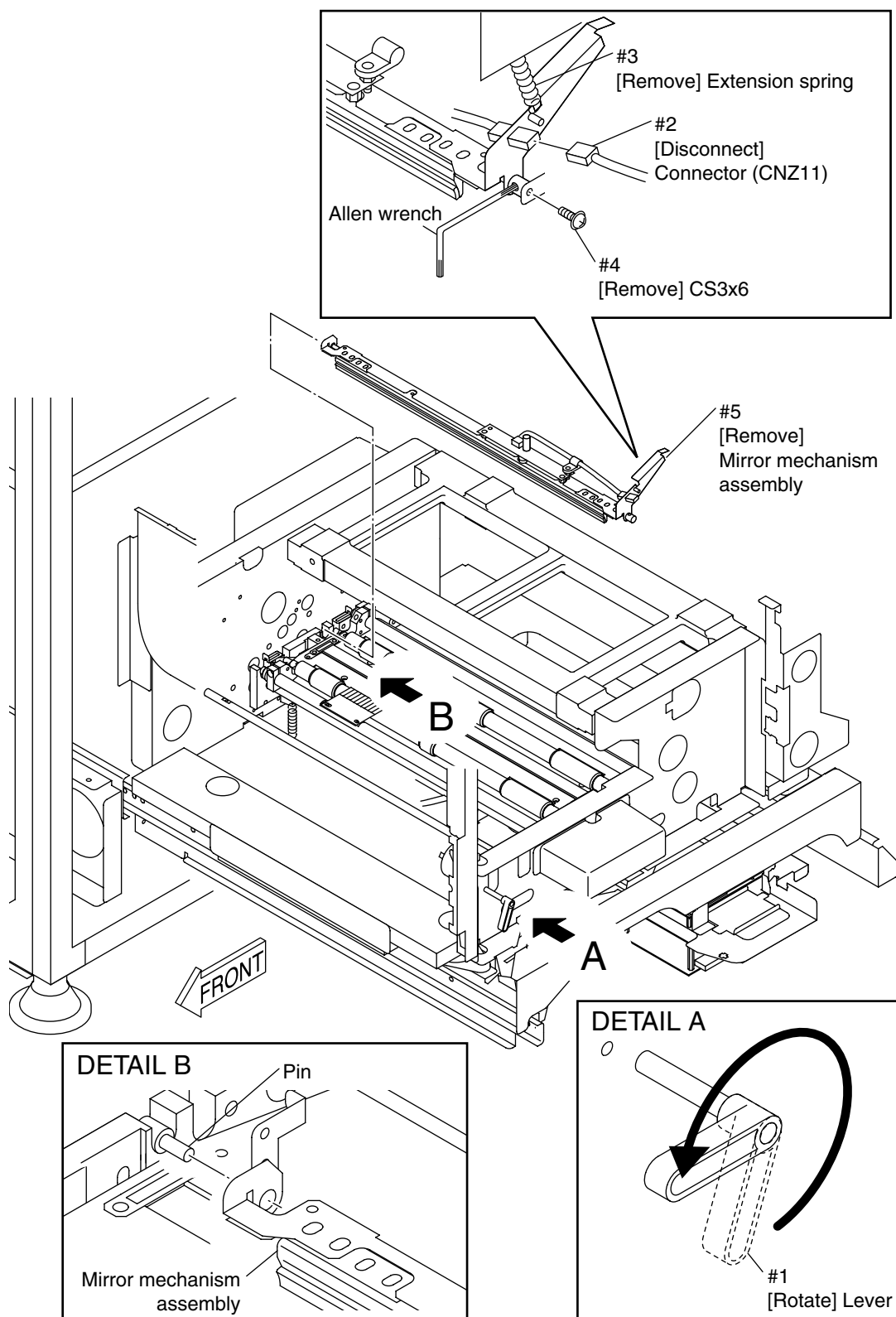


FR7H3641.EPS

(4) Remove the mirror mechanism assembly.

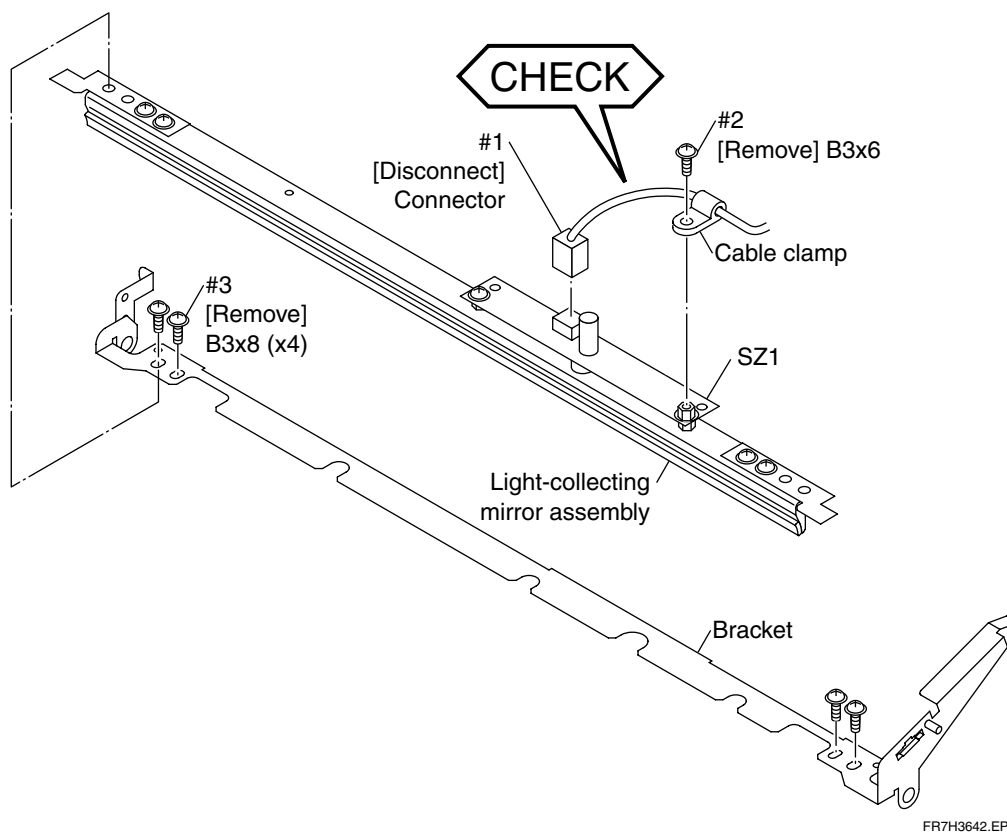
◇ **REFERENCE** ◇

*When removing the mirror mechanism assembly retaining screw (CS3x6), insert an Allen wrench or the like into the mirror mechanism assembly shaft.*

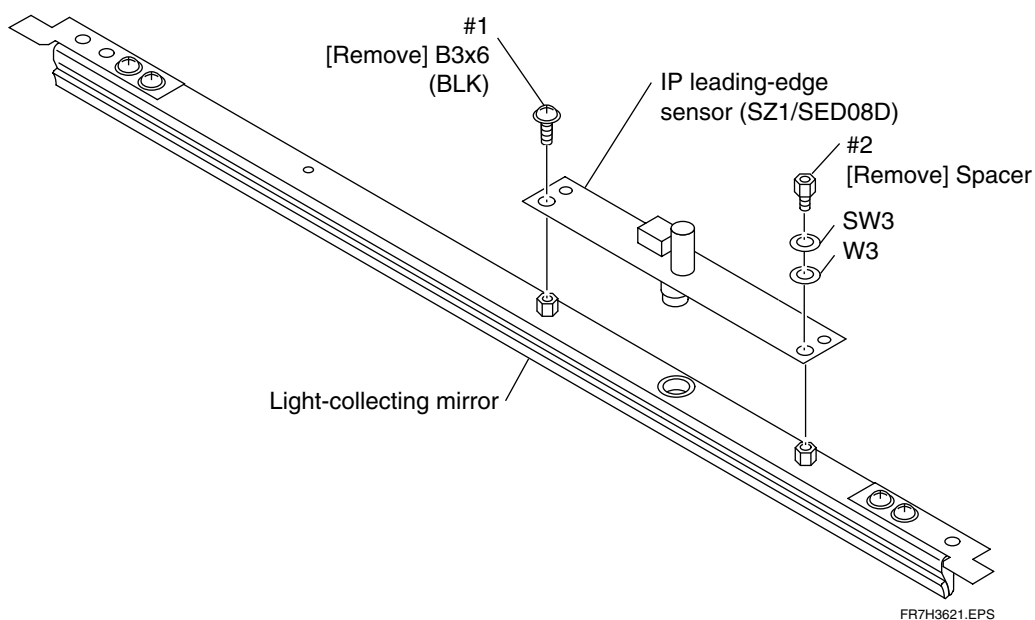


FR7H3645.EPS

(5) Remove the light-collecting mirror assembly.

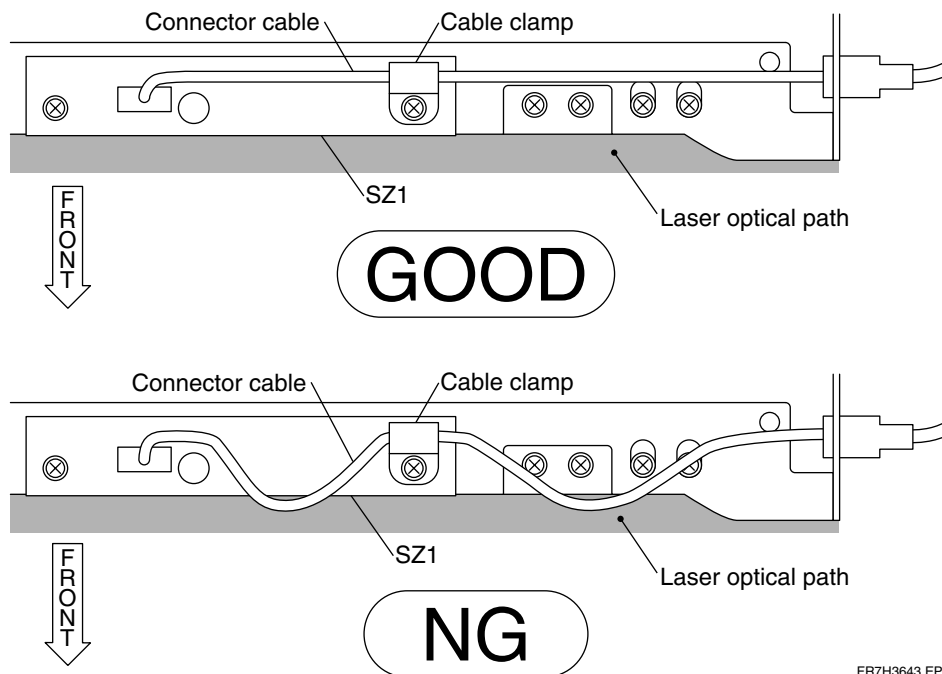


(6) Remove the light-collecting mirror.



**■ Installation procedure****◆ NOTE ◆**

*Check that the SZ1 connector cable is not loosely positioned over the reflection face of the light-collecting mirror. If the cable is positioned over the reflection face of the light-collecting mirror, see the figure below and furnish a complete laser optical path.*



FR7H3643.EPS


Accomplish installation by reversing the removal procedure.

## ■ Check/adjustment procedure


- Check that the SZ1 connector cable is properly routed.

### ◆ **INSTRUCTION** ◆

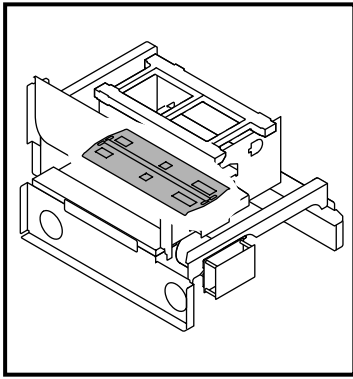
*After the light-collecting mirror is replaced with a new one, make shading/sensitivity corrections.*

 *“9.2 Shading and Sensitivity Corrections”*

- Check for image problems.

 *“9.3 Checking for Image Problems”*

## 10.12 Glass Guide



FR7H3078.EPS



### **CAUTION**

*Do not touch the reflection face of the light-collecting mirror even when you wear gloves.*

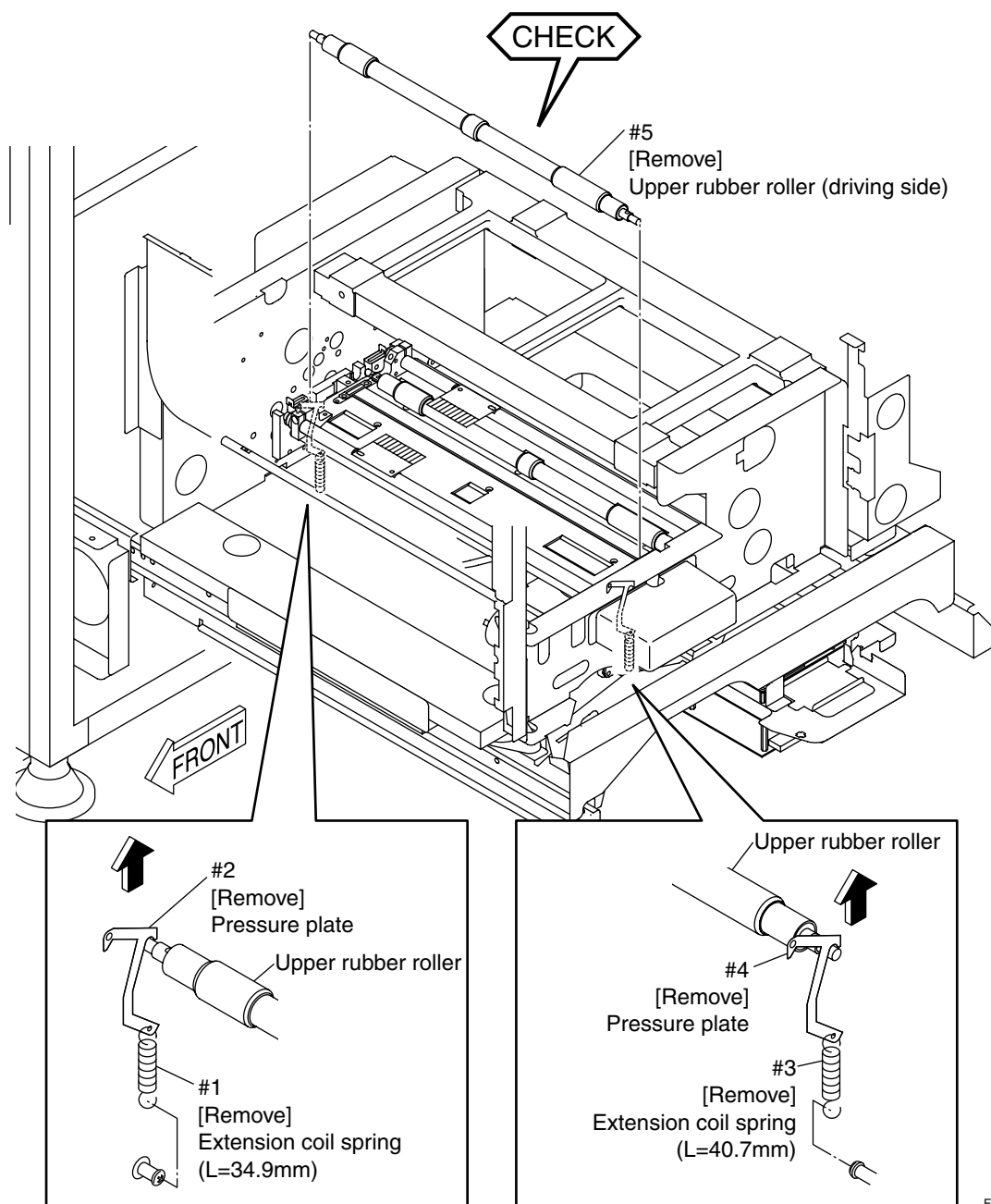
### **◆ INSTRUCTIONS ◆**

- *Wear gloves when handling the light-collecting mirror and glass guide.*
- *If the glass guide is soiled, clean it with a lens cleaner dampened with ethanol.*

### **■ Removal procedure**

- (1) Remove the light-collecting guide assembly (for back surface).  
☞ “10.10 Light-Collecting Guide Assembly (for Back Surface)”
- (2) Remove the mirror mechanism assembly.  
☞ “10.11 Light-Collecting Mirror and IP Leading-Edge sensor (SZ1/SED08D)”

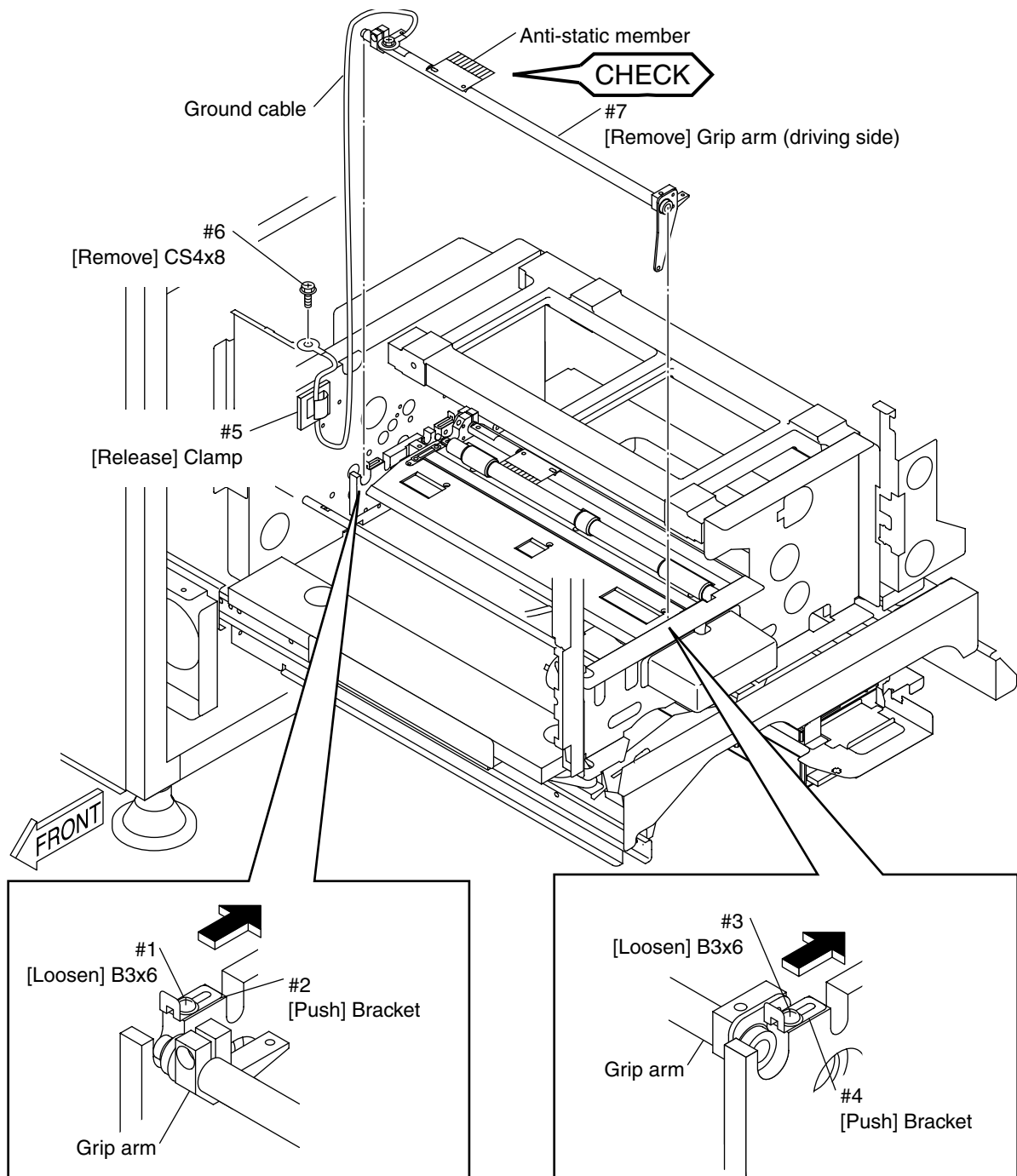
(3) Remove the upper rubber roller (driving side).



FR7H3646.EPS

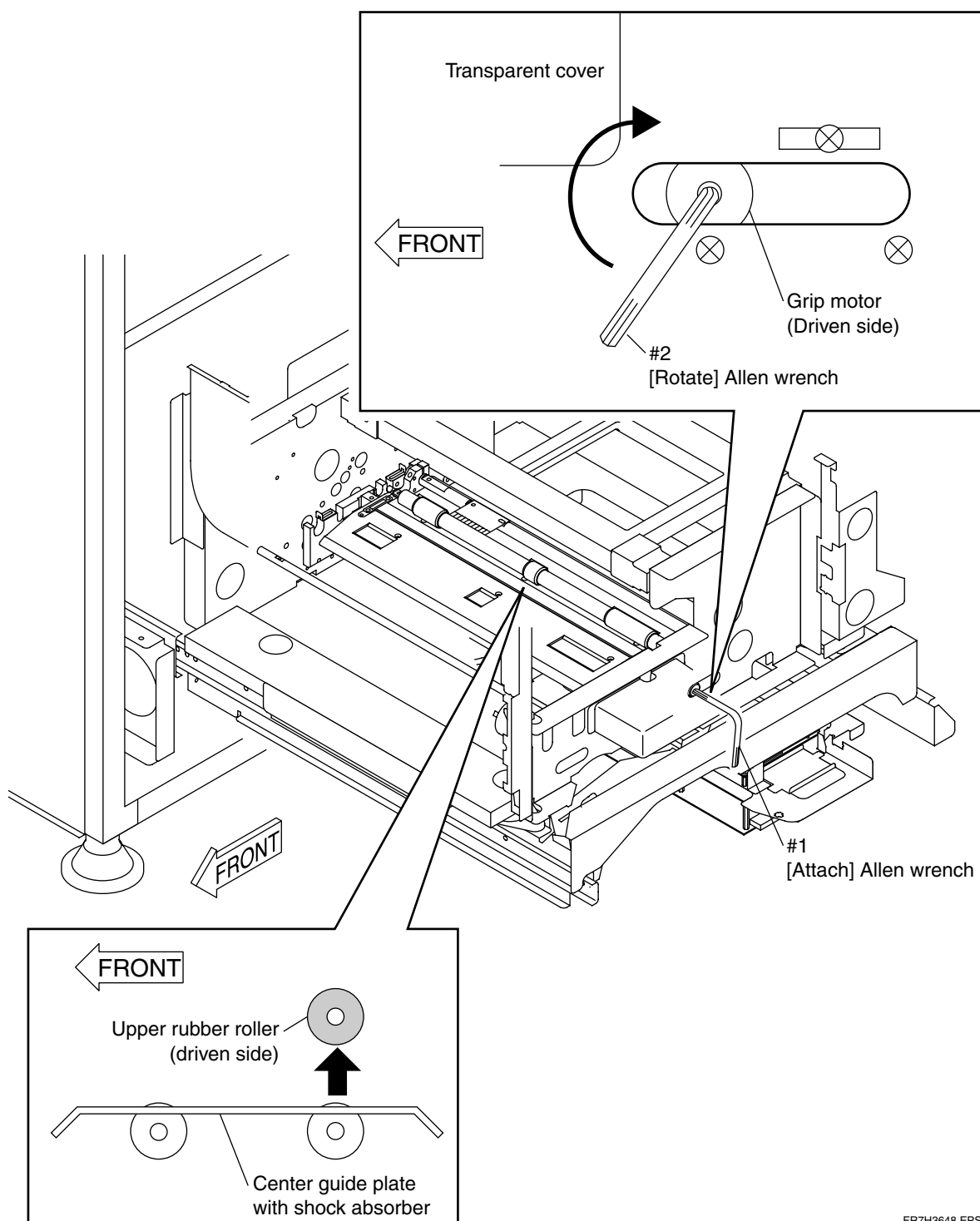


(4) Remove the grip arm (driving side).



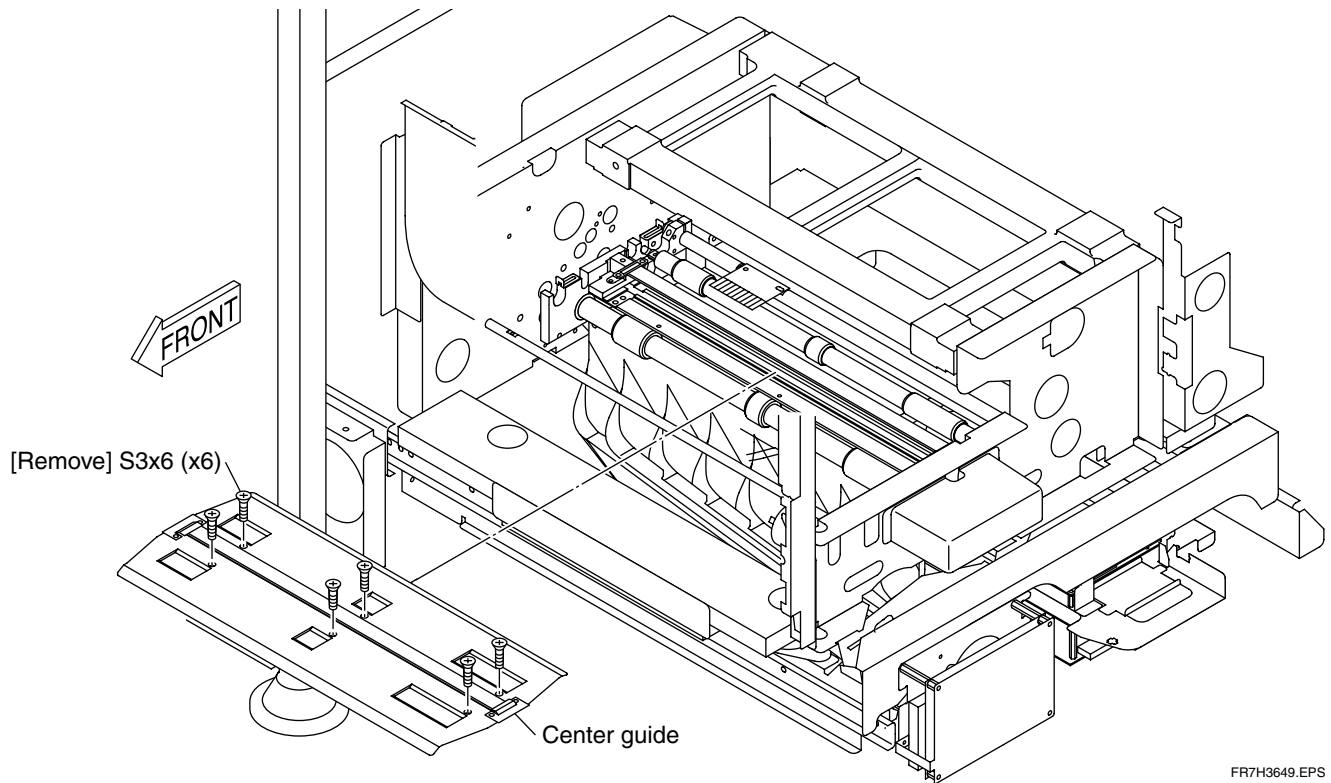
FR7H3647.EPS

(5) Release the grip for the upper rubber roller (driven side).



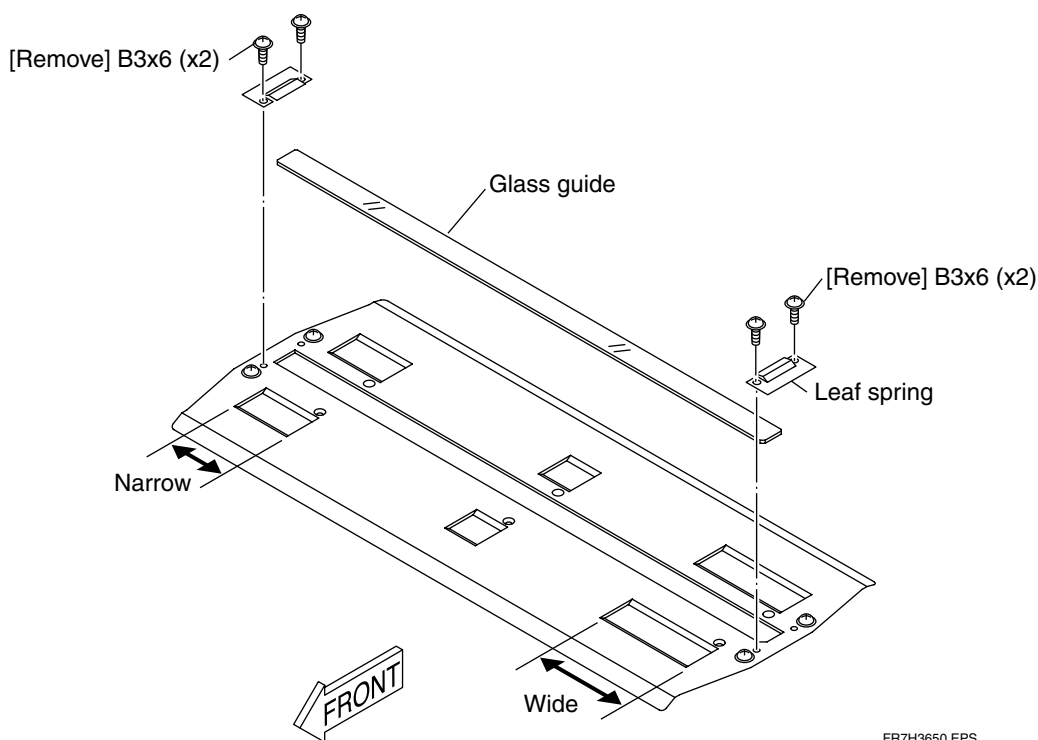
FR7H3648.EPS

(6) Remove the center guide plate.



FR7H3649.EPS

(7) Remove the glass guide.



## ■ Installation procedure

To accomplish installation, reverse the removal procedure.

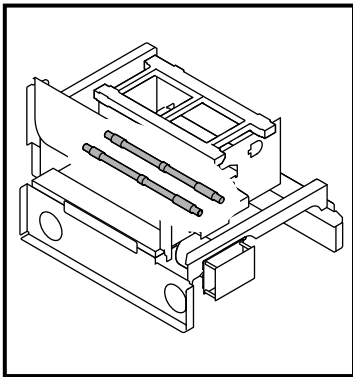
### ◆ INSTRUCTION ◆

*The extension spring size varies with the mounting location. Pay due attention to the extension spring mounting locations.*

## ■ Check/adjustment procedure

- Make sure that the anti-static member is brought into contact with the roller.
- Check that the installed rubber roller is properly oriented.
- Make shading/sensitivity corrections.
- ☞ “9.2 Shading and Sensitivity Corrections”
- Check for image problems.
- ☞ “9.3 Checking for Image Problems”

## 10.13 Lower Rubber Rollers



FR7H3079.EPS

### ■ Removal procedure

- (1) Remove the SUS belt and rubber belt.

☞ “10.3 Rubber Belt and SUS Belt”

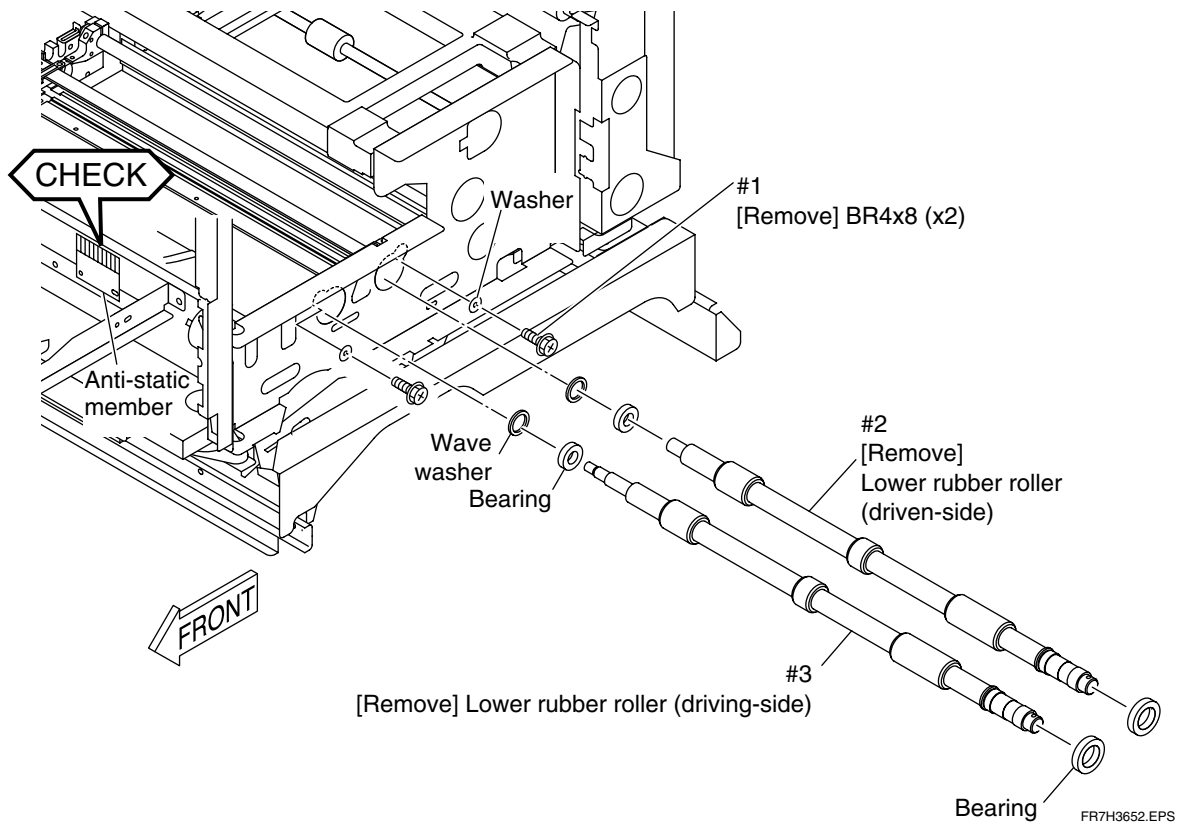
- (2) Remove the flywheel.

☞ “10.5 Flywheel”

- (3) Remove the center guide plate.

☞ “10.12 Glass Guide”

(4) Remove the lower rubber rollers.



## ■ Installation procedure

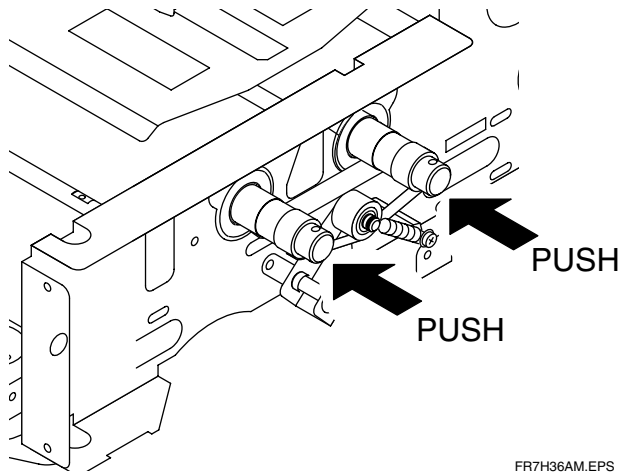
To accomplish installation, reverse the removal procedure.

### ◆ NOTE ◆

*Before screwing a lower rubber roller, conduct the following checks:*

*Push the lower rubber roller in the direction of the arrow in the figure below to check that the elastic force of the wave washer returns the lower rubber roller.*

*If the wave washer does not exert the elastic force to return the lower rubber roller, remove the lower rubber roller and then reinstall it. If the elastic force of the wave washer still does not work to return the roller, replace the wave washer.*



## ■ Check procedure

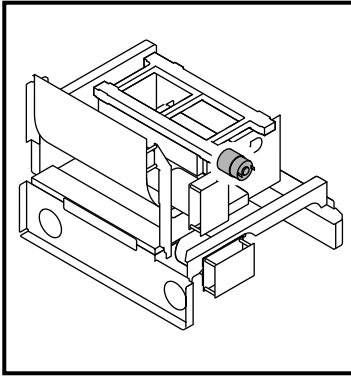
- Make sure that the anti-static member is brought into contact with the roller.
- Check for image problems.

☞ “9.3 Checking for Image Problems”

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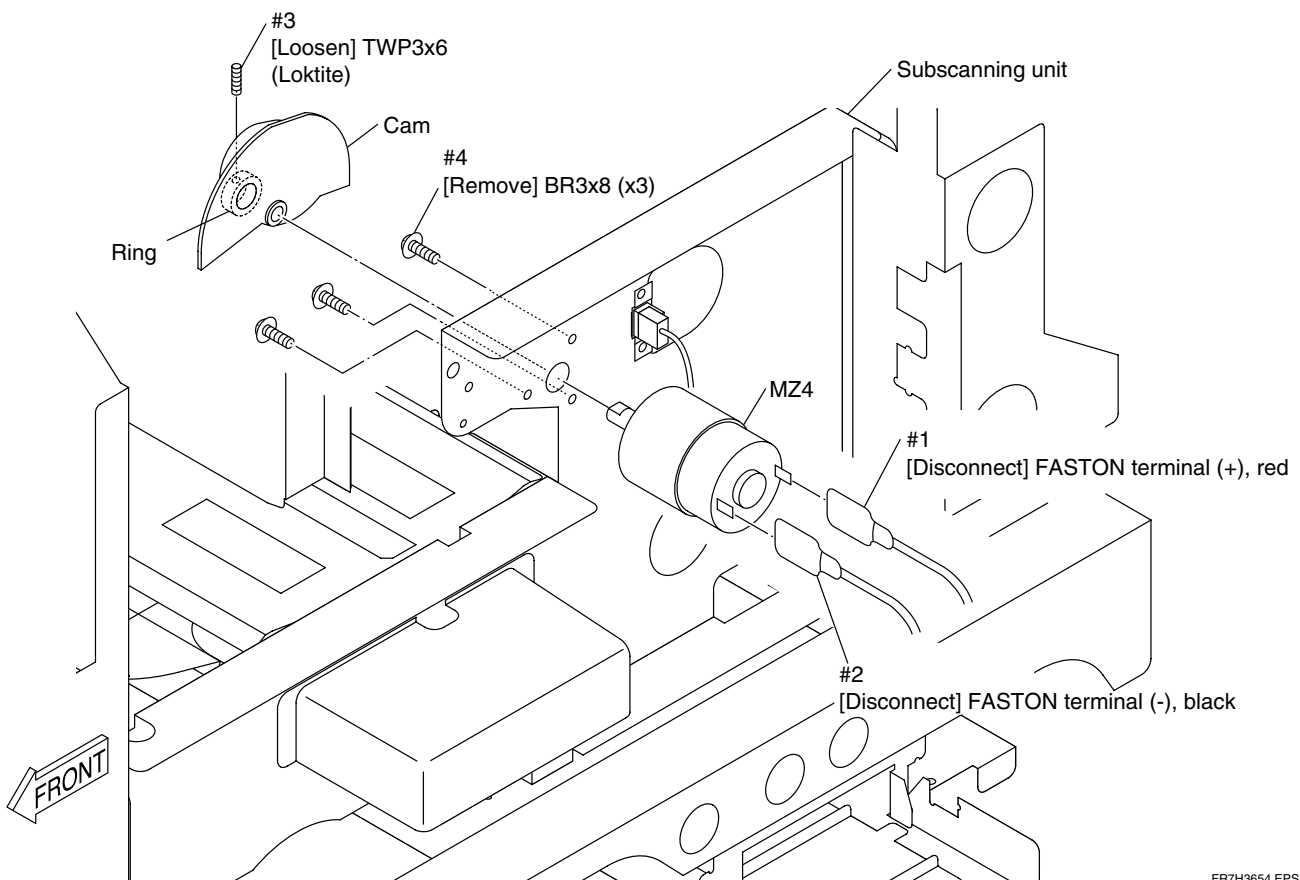
## 10.14 Mirror Driving Motor (MZ4)



FR7H3080.EPS

### ■ Removal procedure

- (1) Remove the light-collecting guide assembly (for front surface).  
 "10.9 Light-Collecting Guide Assembly (for Front Surface)"
- (2) Remove the scanning optics unit.  
 "9.4 Removing and Installing the Scanning Optics Unit"
- (3) Remove the MZ4.

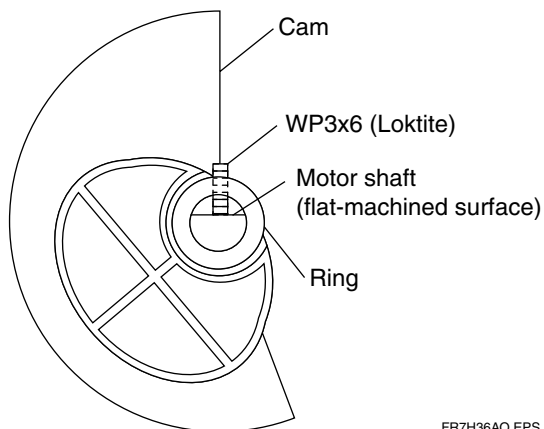


FR7H3654.EPS

## ■ Installation procedure

### ◆ INSTRUCTION ◆

When mounting the cam on the MZ4, secure it with the MZ4 motor shaft (flat-machined surface) positioned as indicated below:

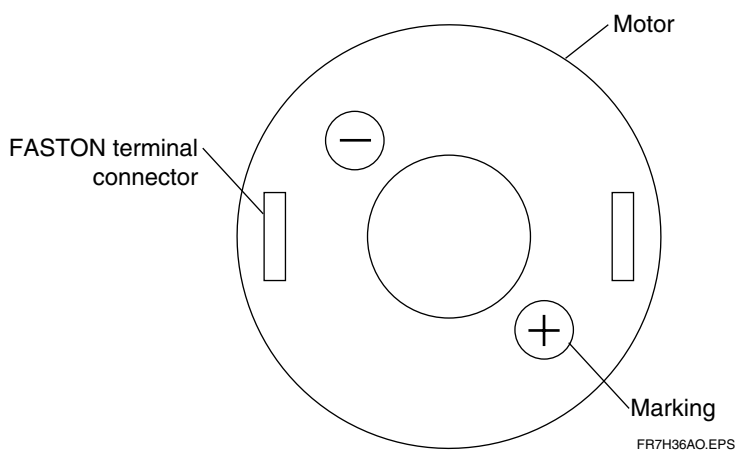


### ◆ NOTE ◆

When connecting the FASTON terminals (+ and -), insert them all the way into their positions.

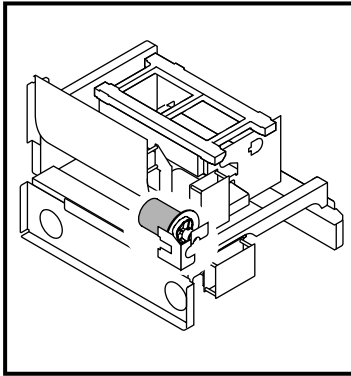
### ◇ REFERENCE ◇

The FASTON terminal (+/-) connectors are marked "+" or "-". Note the "+" and "-" markings and make proper terminal connections.




To accomplish installation, reverse the removal procedure.

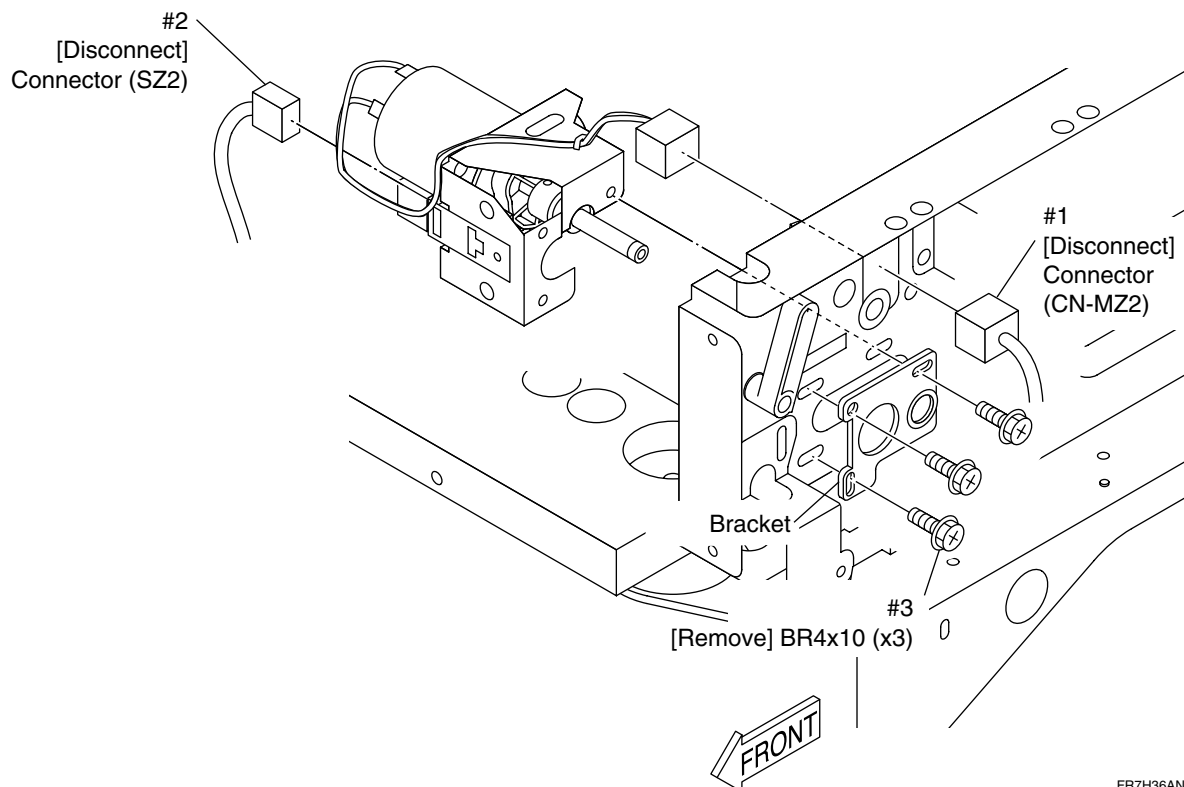
## 10.15 Driving-Shaft Grip Motor (MZ2)



FR7H3081.EPS

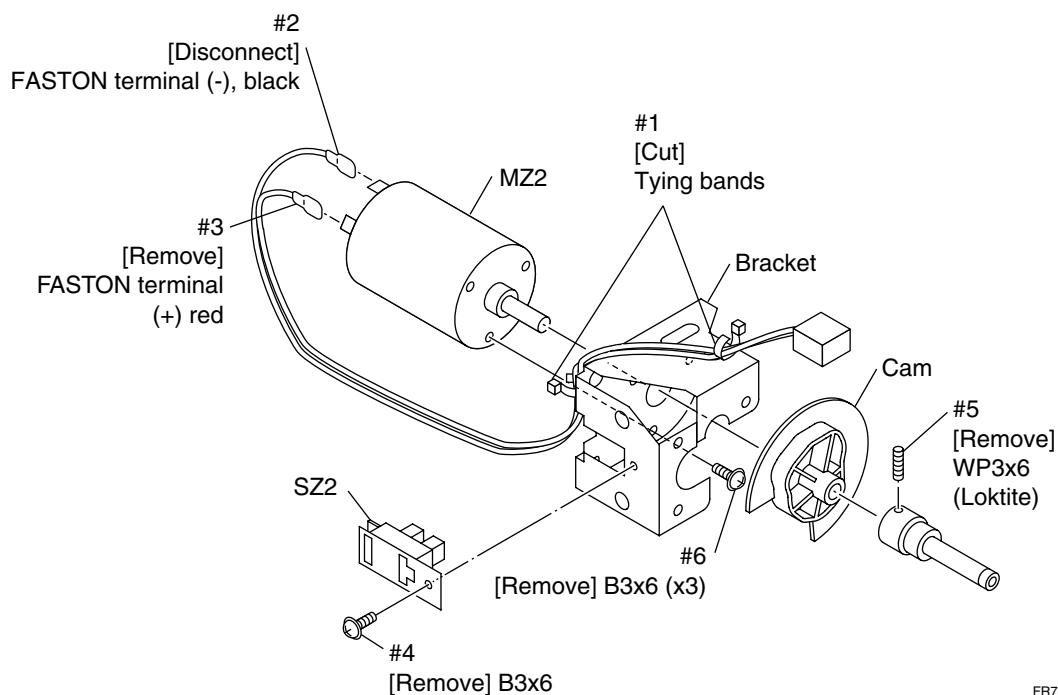
### ■ Removal procedure

- (1) Remove the light-collecting guide assembly (for back surface).  
 "10.10 Light-Collecting Guide Assembly (for Back Surface)"
- (2) Remove the MZ2 assembly.



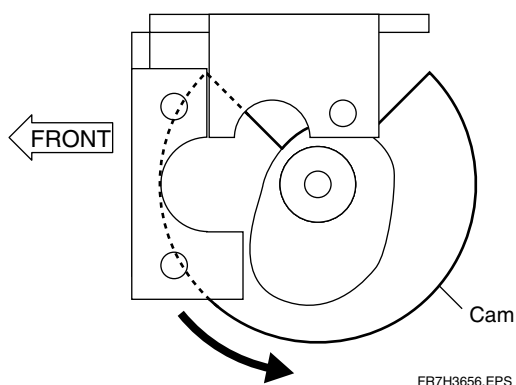
FR7H36AN.EPS

(3) Remove the MZ2.



### ◇ REFERENCE ◇

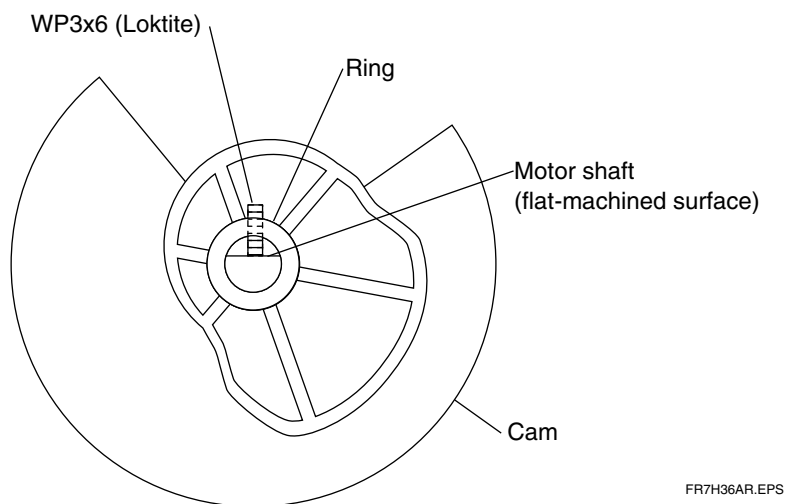
When removing the cam, rotate it to the position indicated below:



## ■ Installation procedure

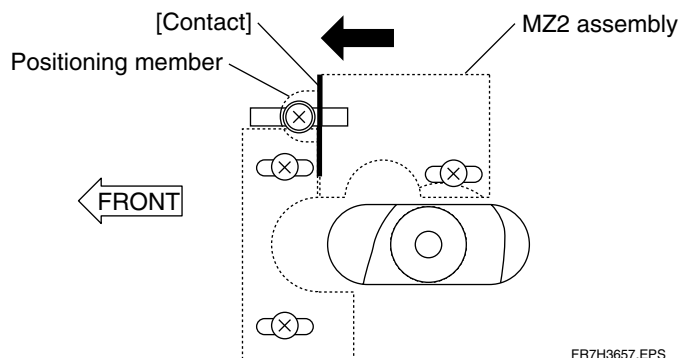
### ◆ INSTRUCTION ◆

When mounting the cam on the MZ2, secure it with the MZ2 motor shaft (flat-machined surface) positioned as indicated below:



### ◆ NOTE ◆

When installing the MZ2 assembly, press it against the positioning member.



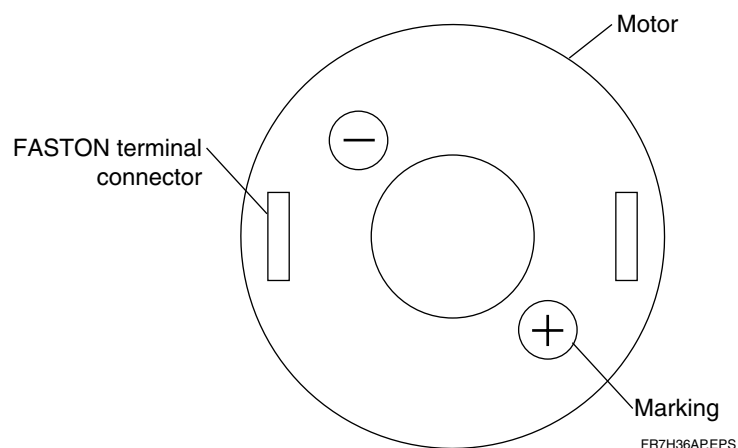
To accomplish installation, reverse the removal procedure.

**◆ NOTE ◆**

*When connecting the FASTON terminals (+ and -), insert them all the way into their positions.*

**◇ REFERENCE ◇**

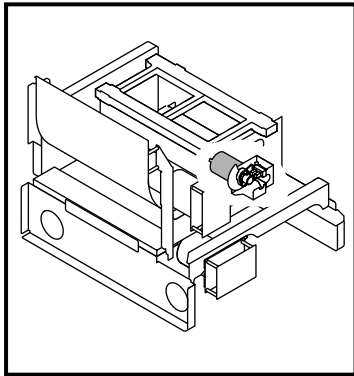
*The FASTON terminal (+/-) connectors are marked “+” or “-”. Note the “+” and “-” markings and make proper terminal connections.*

**■ Check procedure**

Check for image problems.

👉 “9.3 Checking for Image Problems”

## 10.16 Driven-Shaft Grip Motor (MZ3)



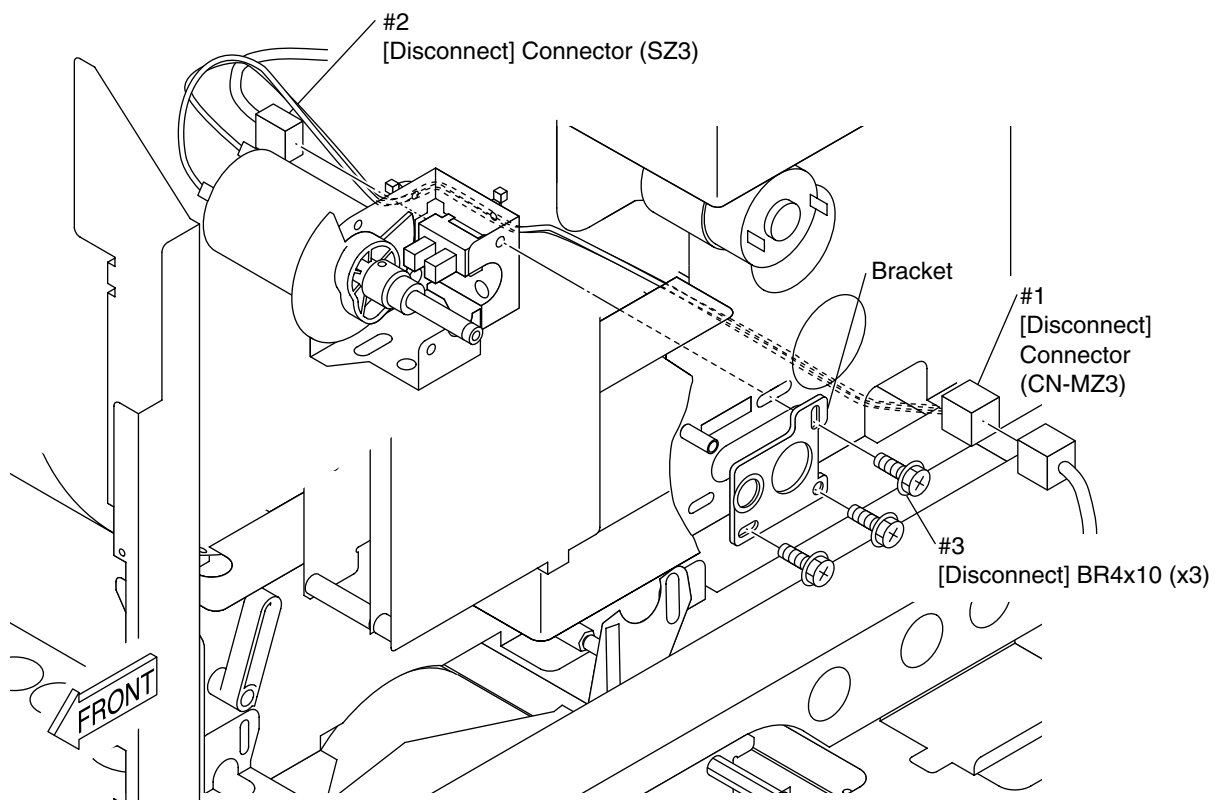
FR7H3082.EPS

### ■ Removal procedure

- (1) Remove the side-positioning conveyor.

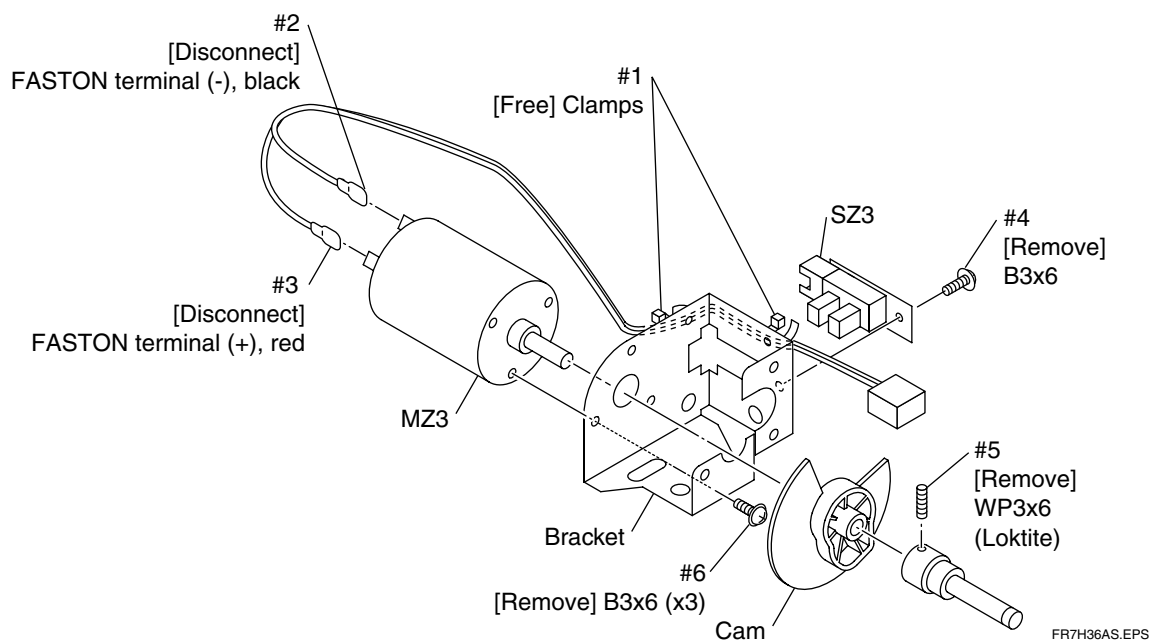
☞ “8.1 Side-Positioning Conveyor”

- (2) Remove the MZ3 assembly.



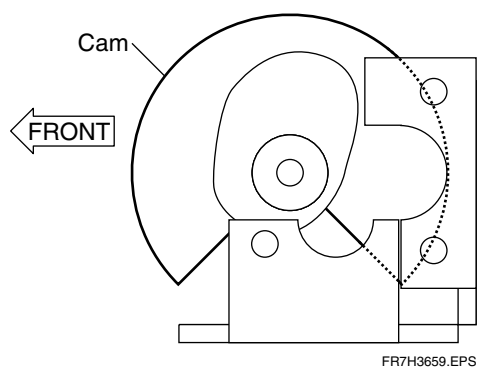
FR7H3658.EPS

(3) Remove the MZ3.



### ◇ REFERENCE ◇

When removing the cam, rotate it to the position indicated below:

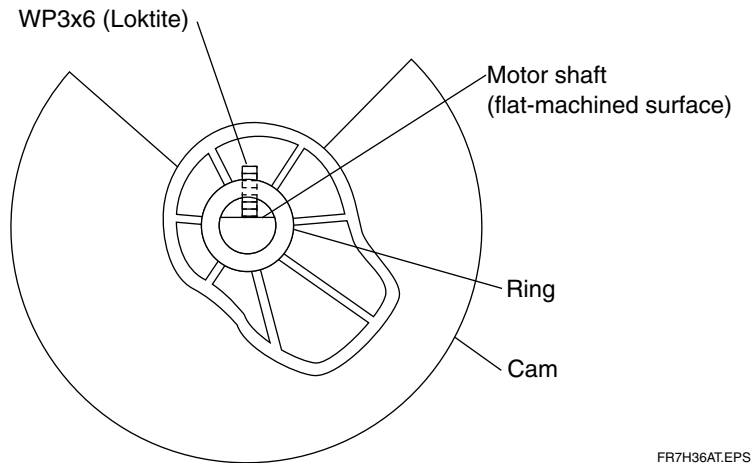




## ■ Installation procedure

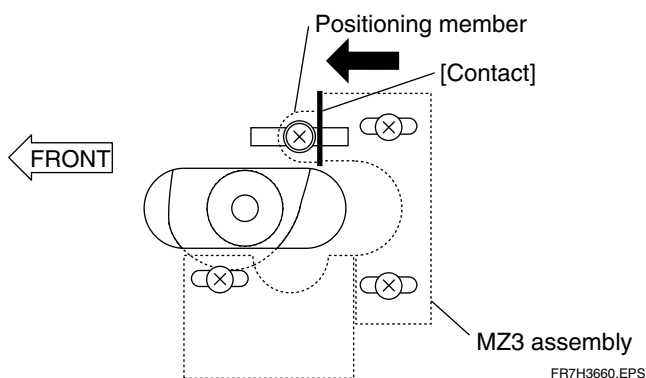
### ◆ INSTRUCTION ◆

*When mounting the cam on the MZ3, secure it with the MZ3 motor shaft (flat-machined surface) positioned as indicated below:*



### ◆ NOTE ◆

*When installing the MZ3 assembly, press it against the positioning member.*



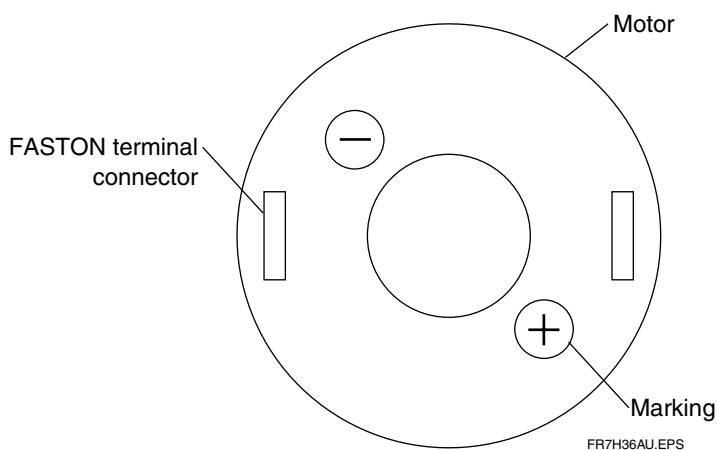
To accomplish installation, reverse the removal procedure.

**◆ NOTE ◆**

*When connecting the FASTON terminals (+ and -), insert them all the way into their positions.*

**◇ REFERENCE ◇**

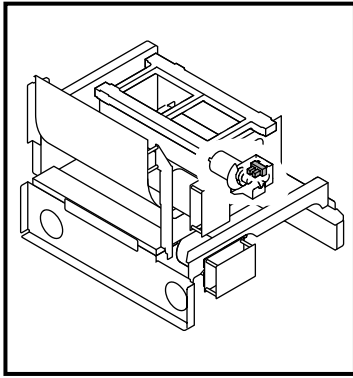
*The FASTON terminal (+/-) connectors are marked “+” or “-”. Note the “+” and “-” markings and make proper terminal connections.*

**■ Check procedure**

Check for image problems.

👉 “9.3 Checking for Image Problems”

## 10.17 Driven-Side Grip Release HP Sensor (SZ3)



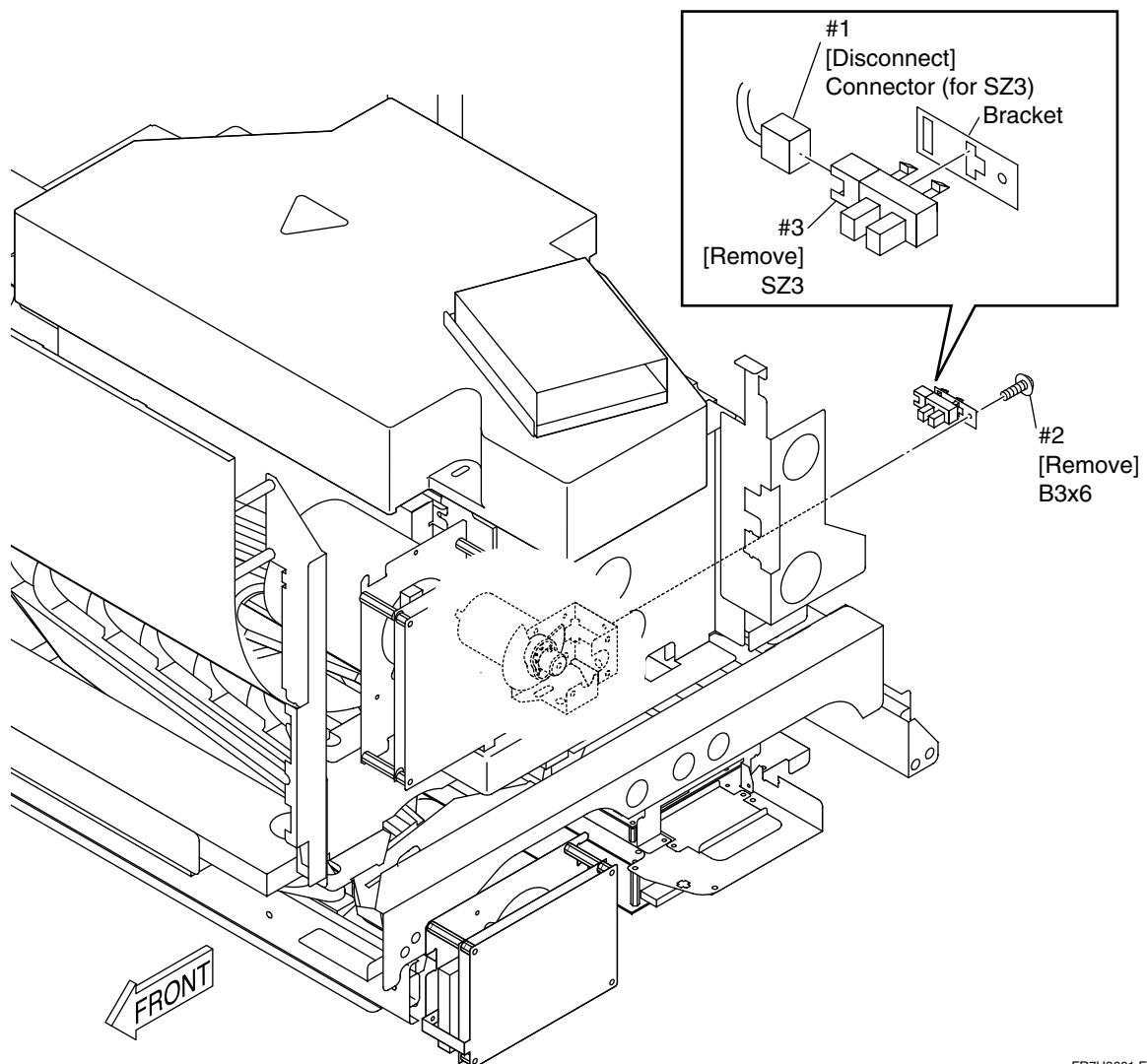
FR7H3083.EPS

### ■ Removal procedure

- (1) Remove the side-positioning conveyor.

☞ “8.1 Side-Positioning Conveyor”

- (2) Remove the SZ3.

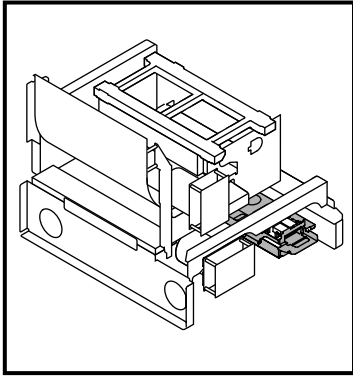


FR7H3661.EPS

**■ Installation procedure**

To accomplish installation, reverse the removal procedure.

## 10.18 Subscanning Unit Controller Assembly



FR7H3084.EPS



### CAUTIONS

- *When servicing a PC board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the PC board.*
- *Before removing a cover, be sure to turn OFF the high-voltage switch. Removing a cover with the machine turned ON causes photomultiplier damage.*

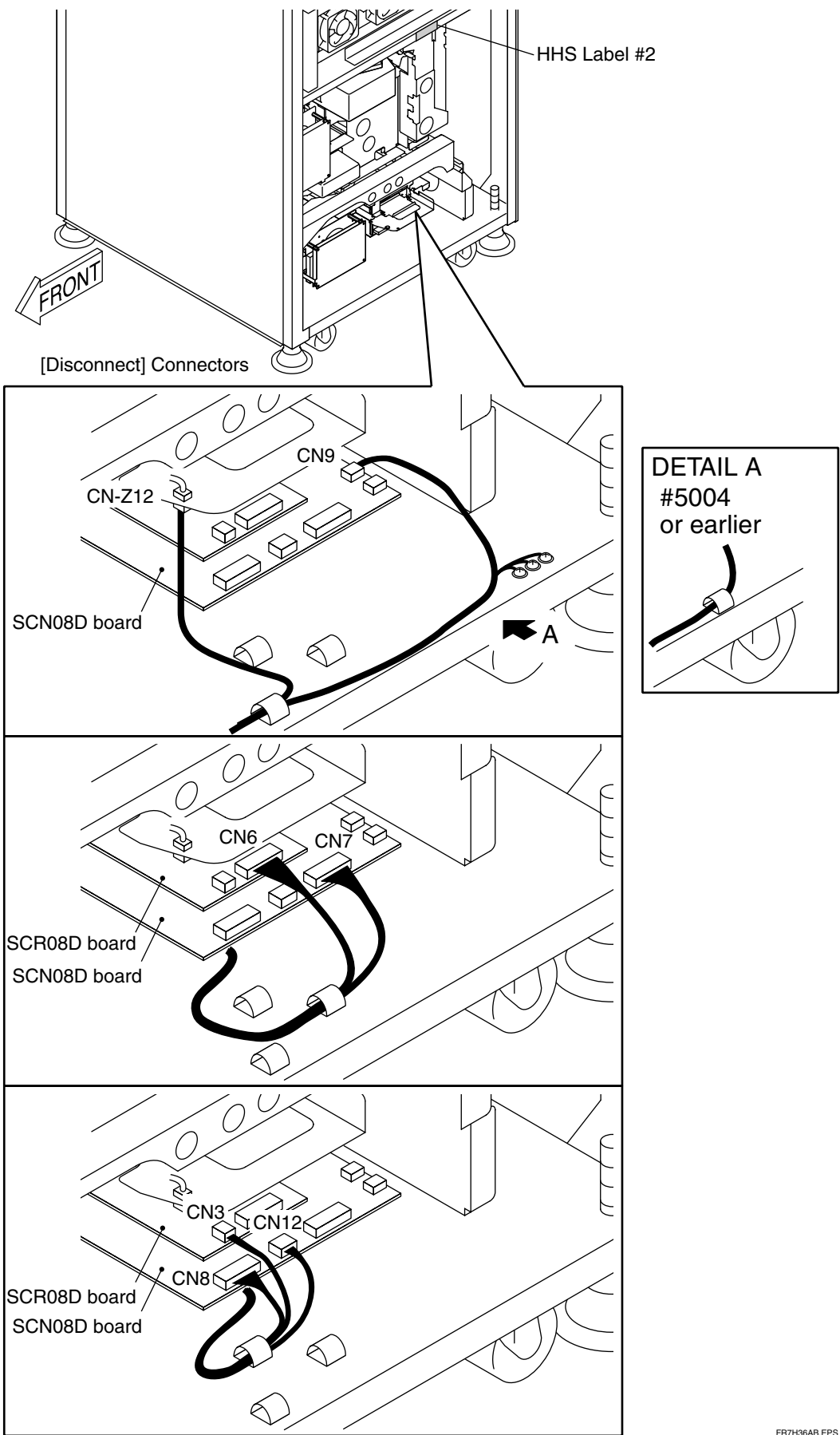
### ■ Removal procedure

(1) Remove the following covers:

- Lower front cover
- Lower right-hand side cover
- Right-hand inner cover

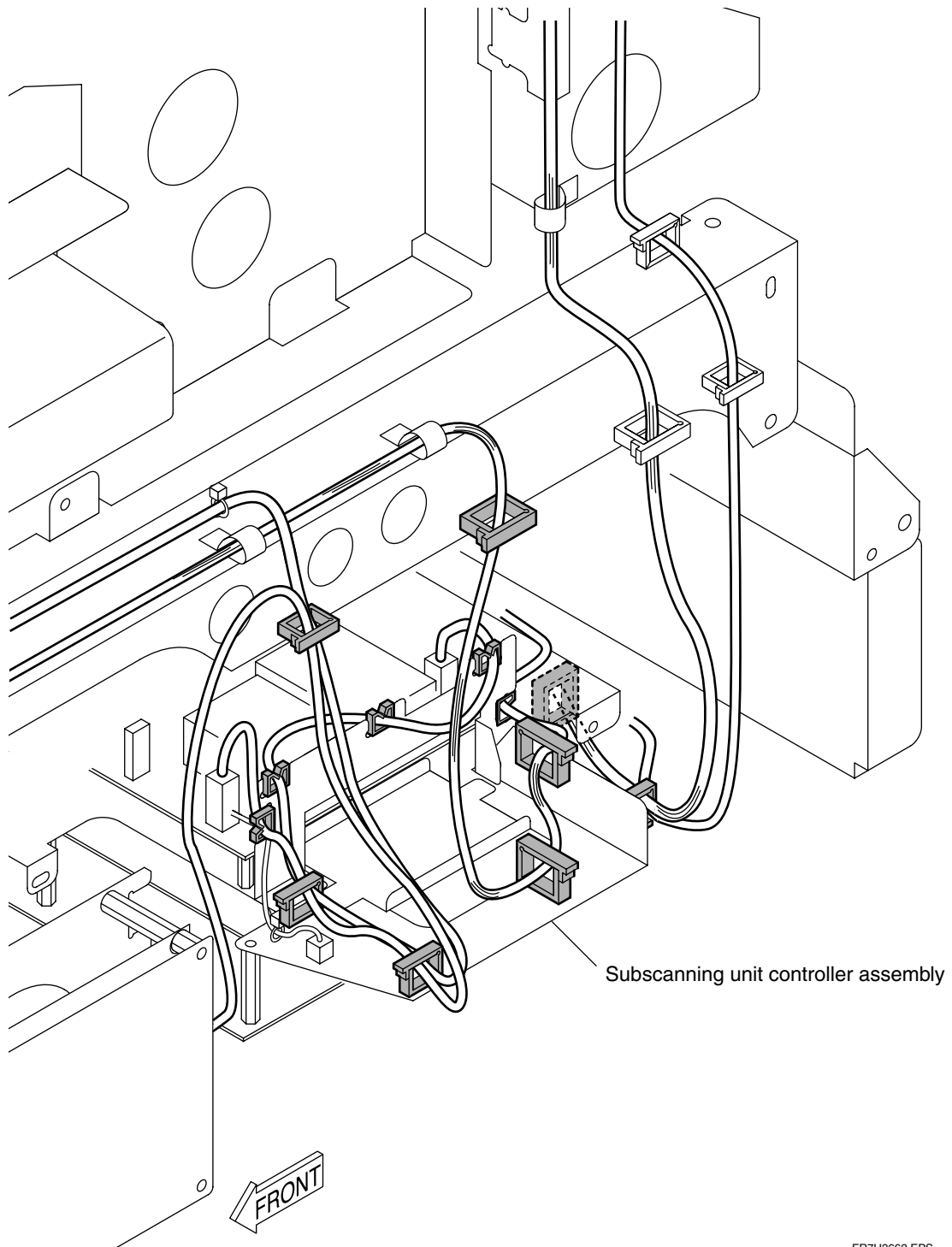
☞ “3. Removing and Installing the Covers”

(2) Disconnect the connectors.



FR7H36AB.EPS

- (3) Remove the cables from the cable clamps and edge saddles.

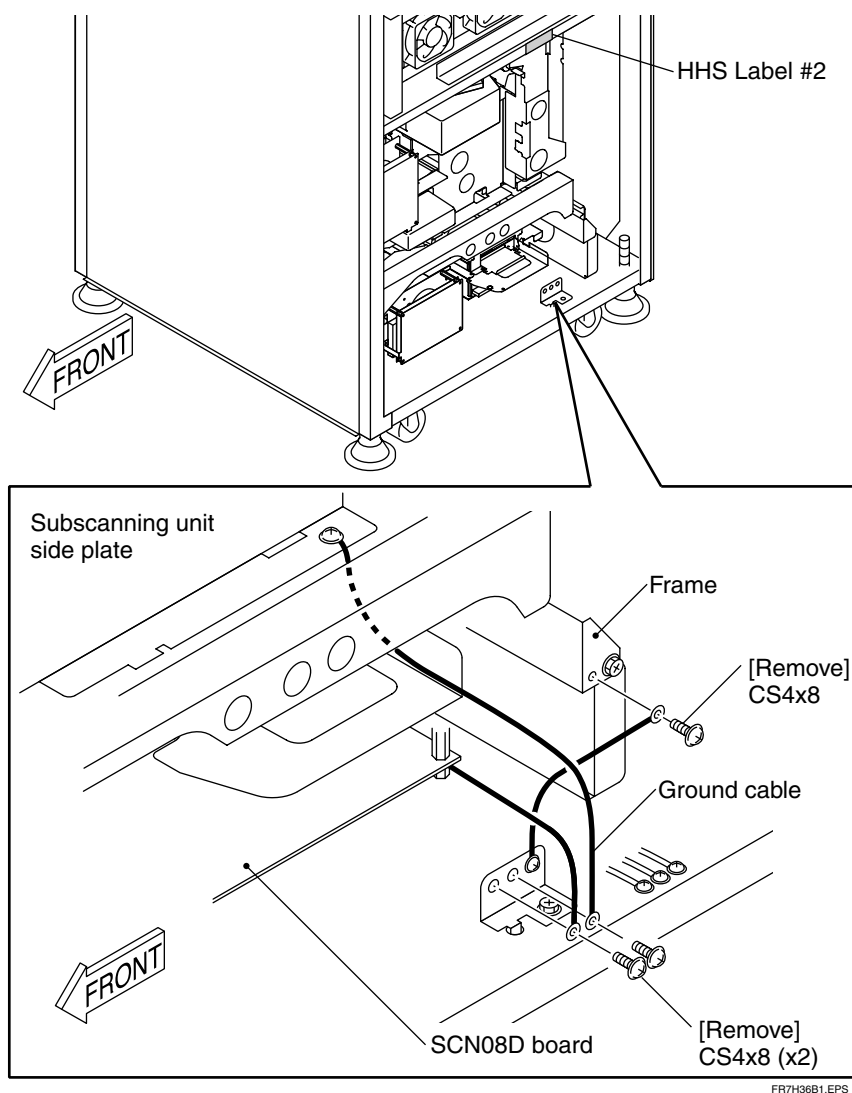


FR7H3662.EPS

(4) Remove the ground cable.

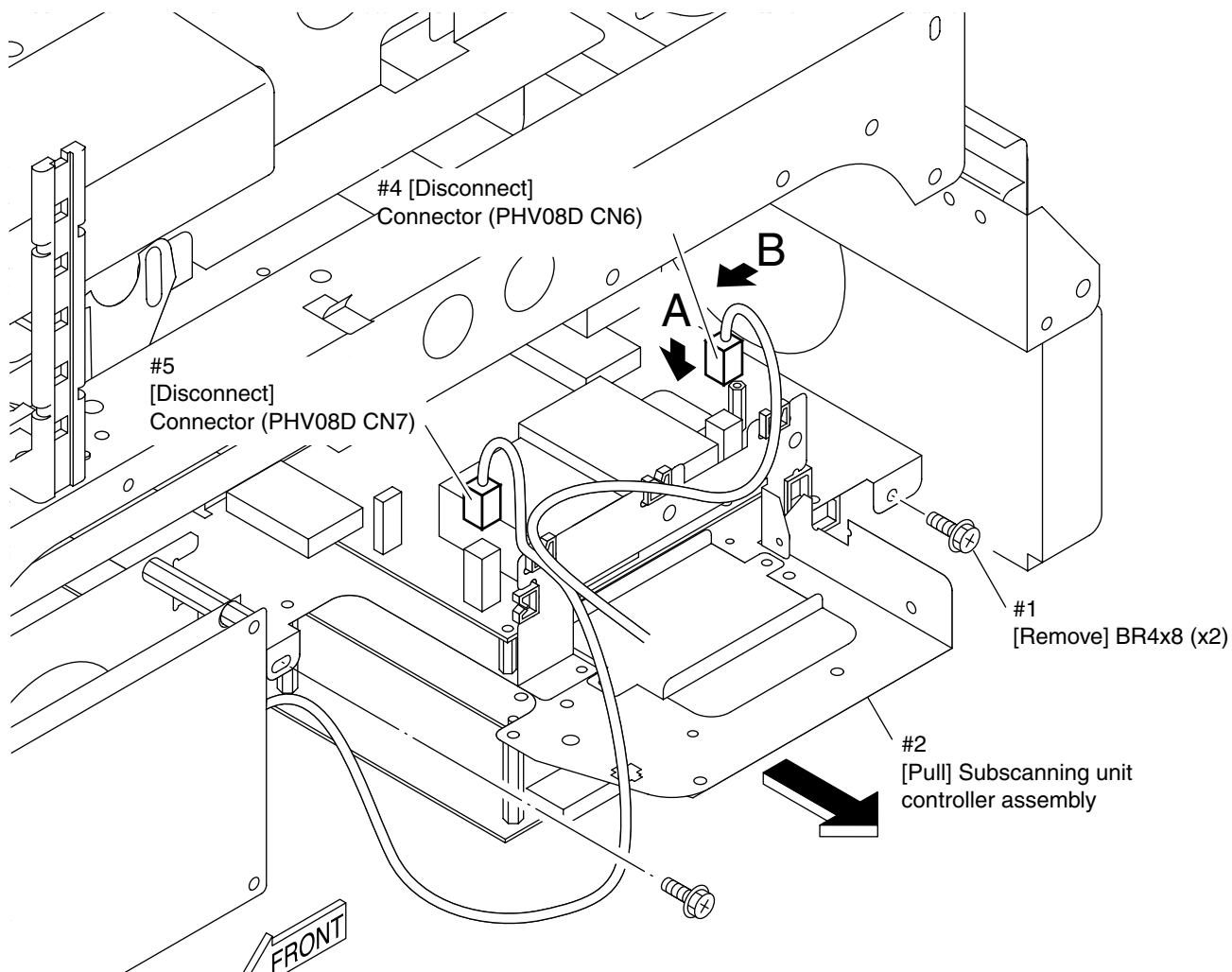
◇ **REFERENCE** ◇

*This procedure is not required for units with serial number 5004 or earlier.*

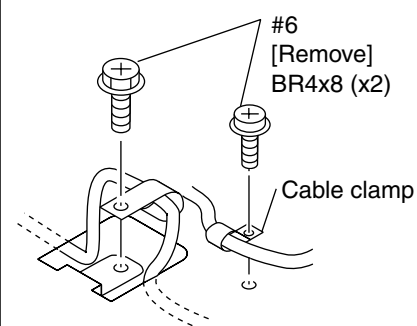




(5) Disconnect the connectors.

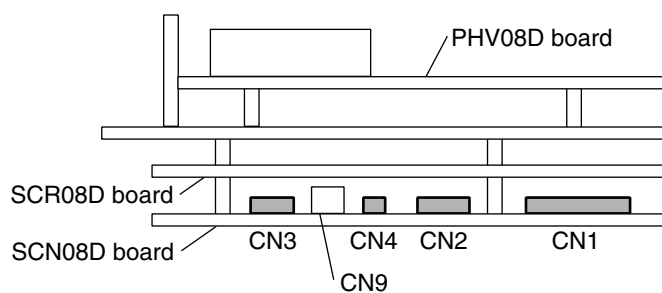


DETAIL A



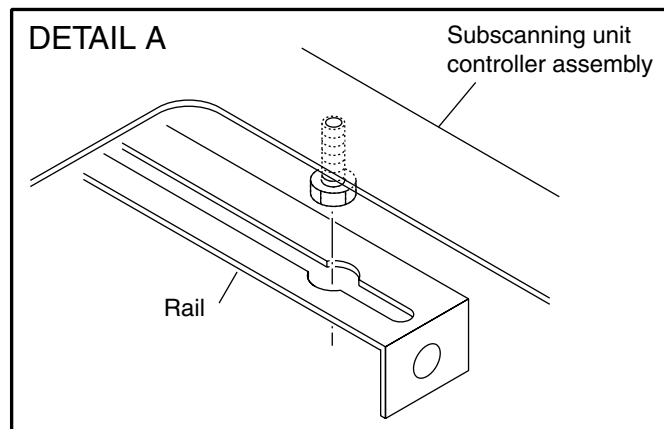
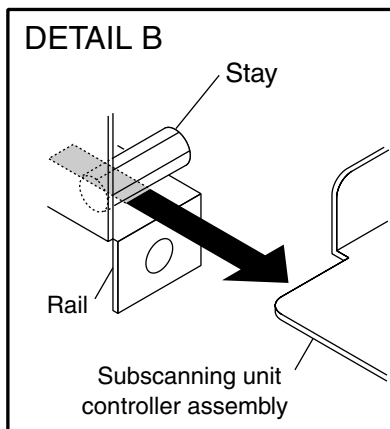
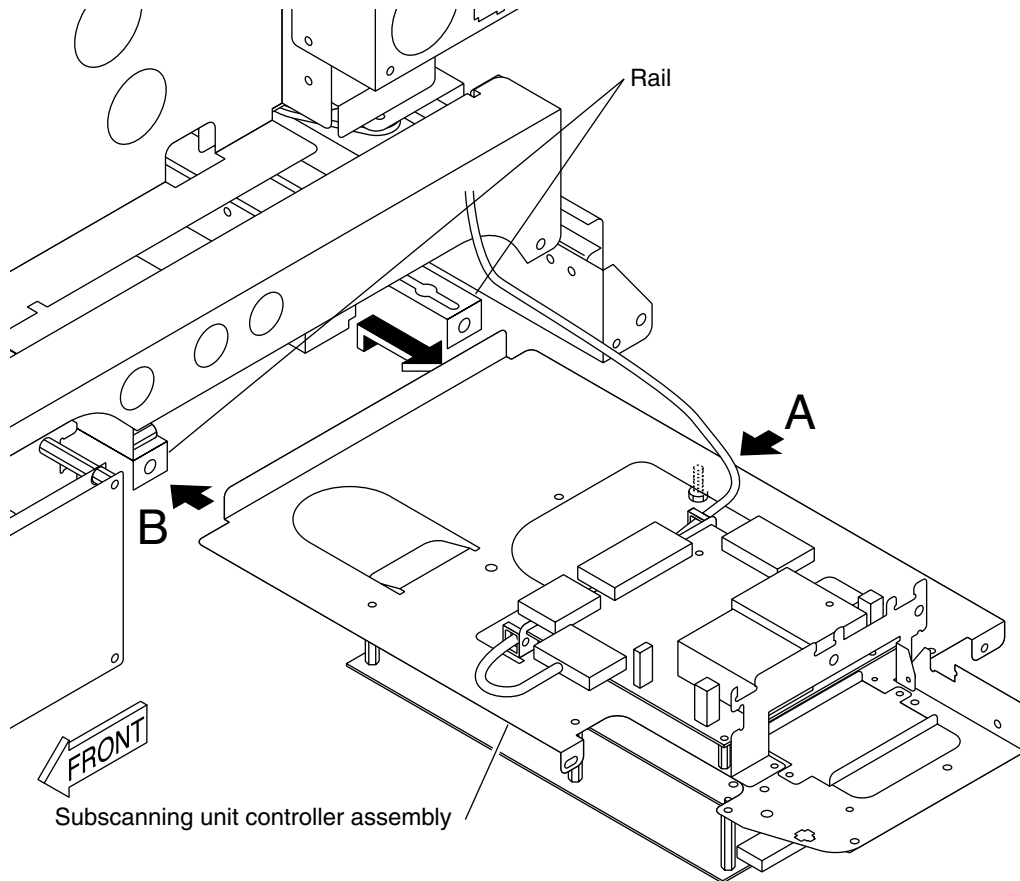
DETAIL B

**#3 [Disconnect] Connector (SCN08D CN1 to 4)**



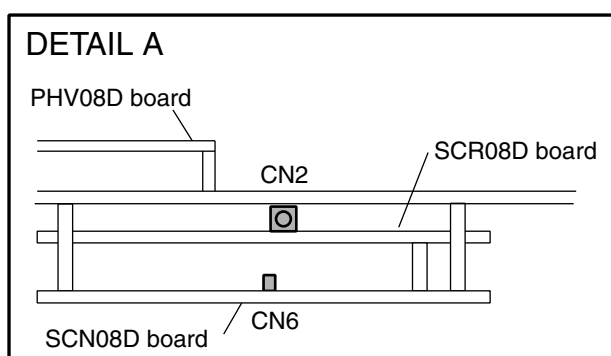
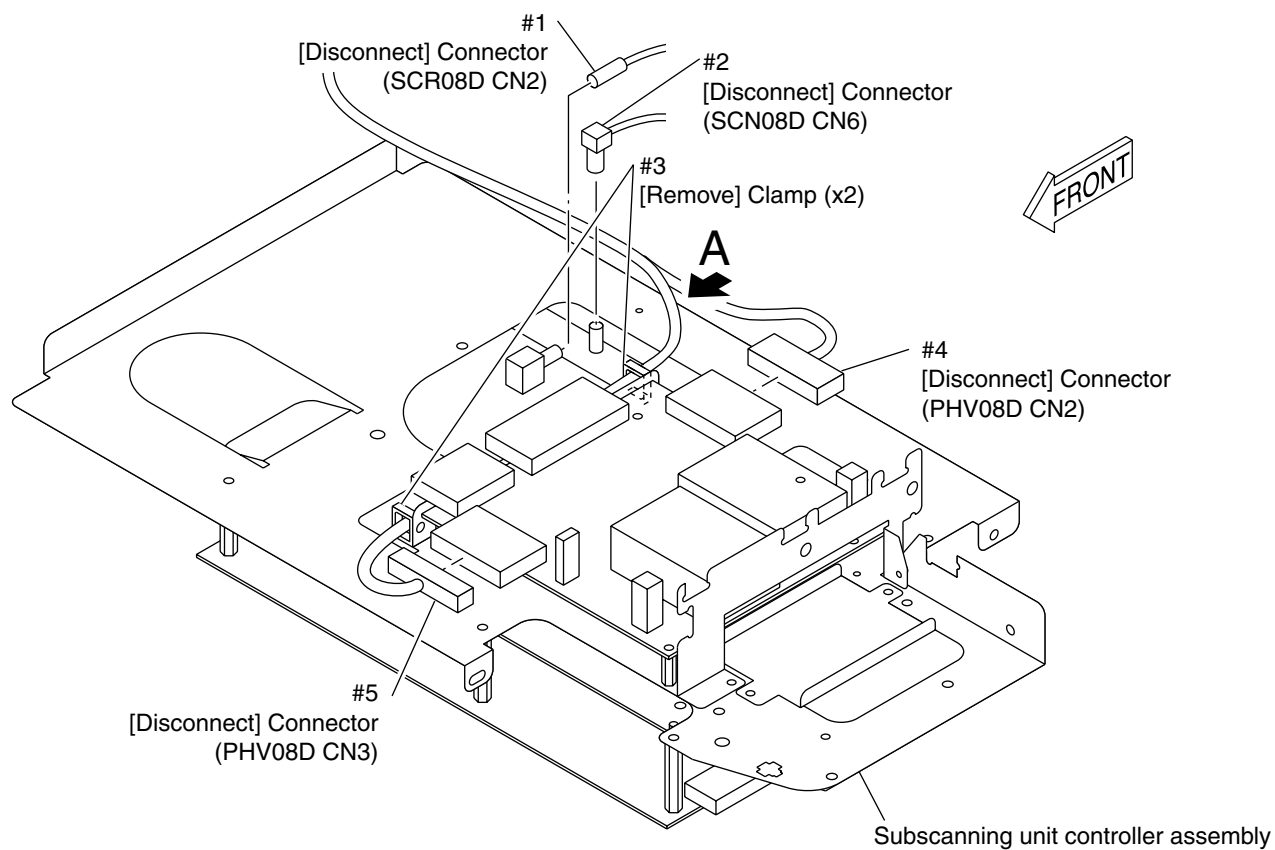
FR7H3663.EPS

(6) Remove the subscanning unit controller assembly.



FR7H36AC.EPS

(7) Disconnect the connectors.

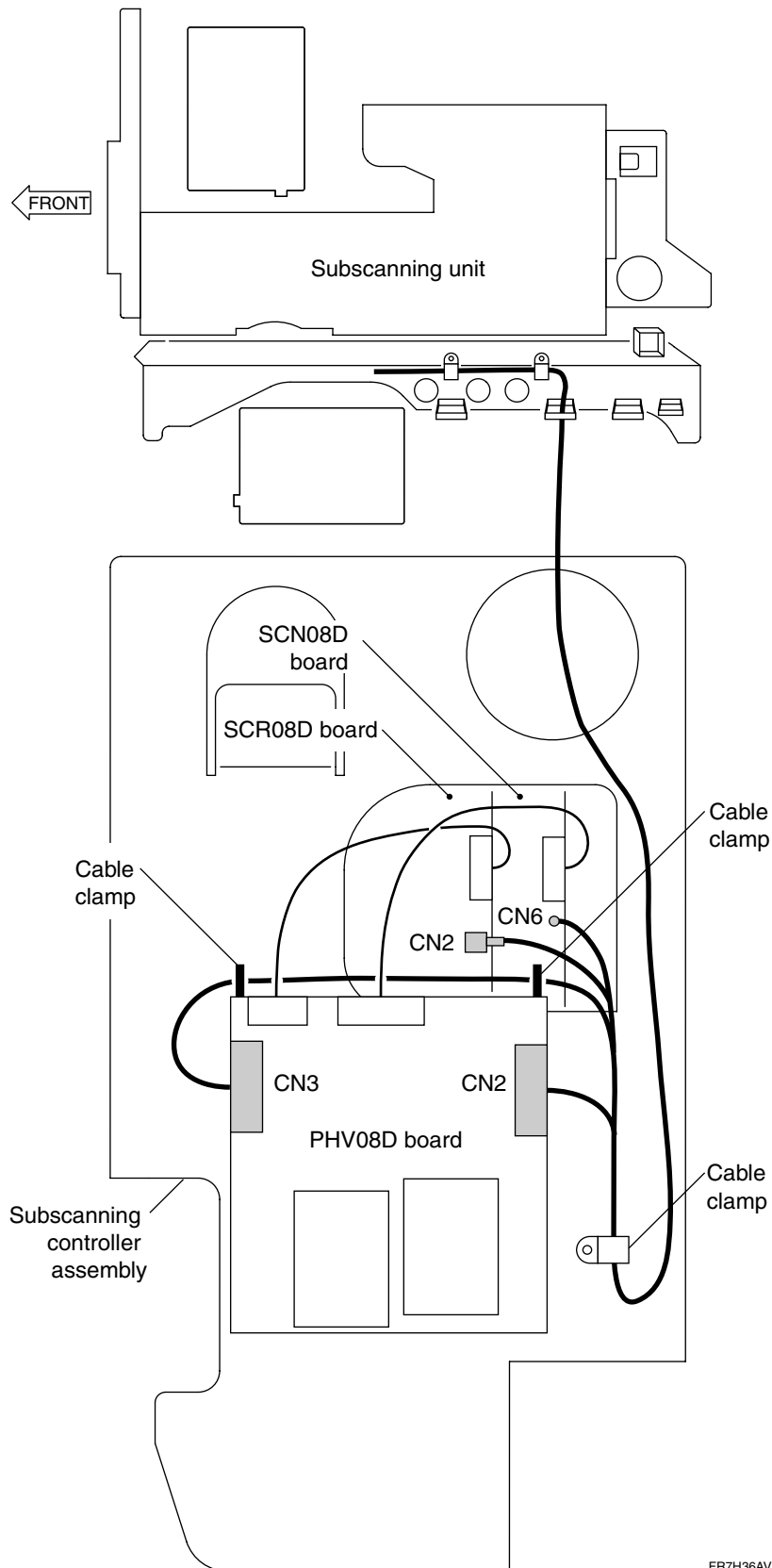


FR7H3664.EPS

## ■ Installation procedure

(1) Connect the following connectors.

- PHV08D CN2, 3
- SCN08D CN6
- SCR08D CN2



(2) Reinstall the subscanning controller assembly.

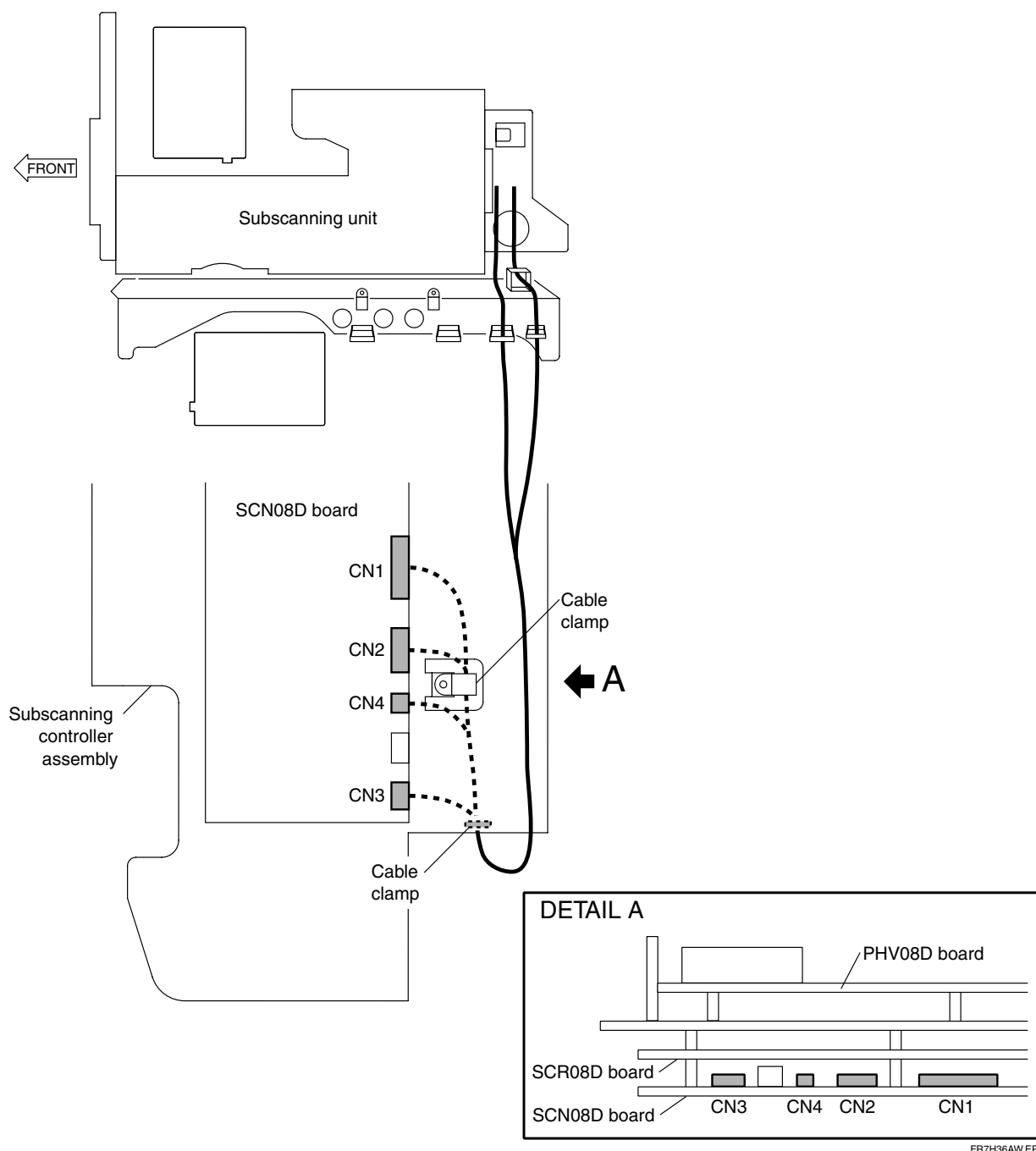
◆ **NOTE** ◆

*When reinstalling the subscanning controller assembly, insert it along the rail.*

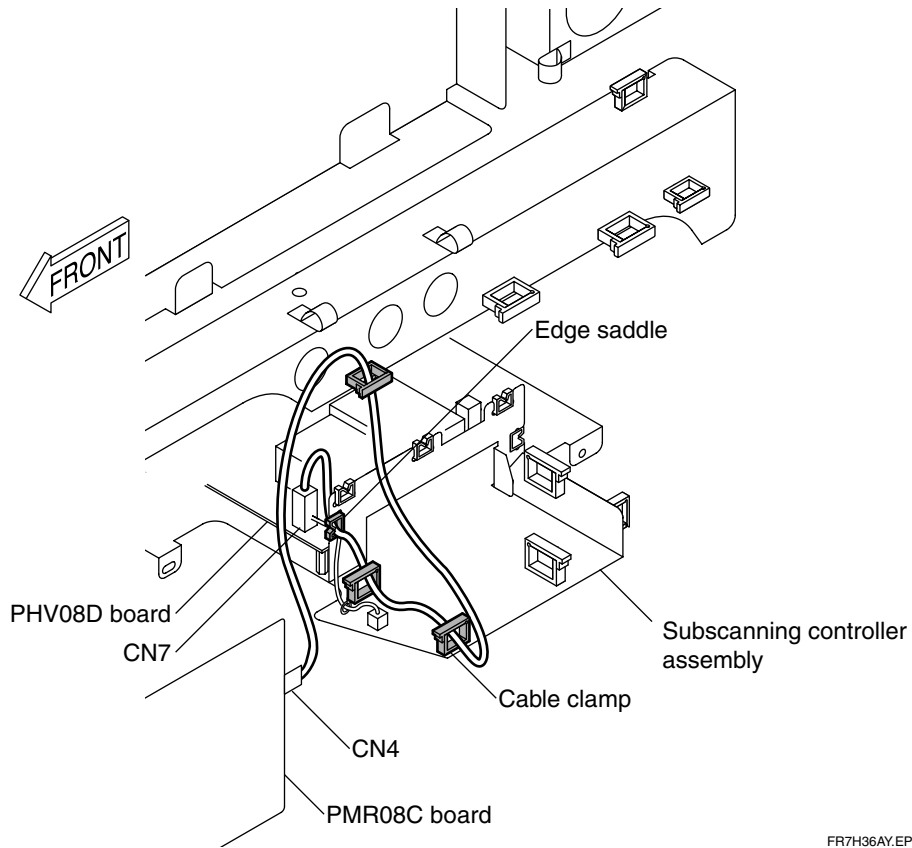
◇ **REFERENCE** ◇

*Keep the subscanning controller assembly in such a state that it is pulled out halfway.*

(3) Connect SCN08D CN1–4.

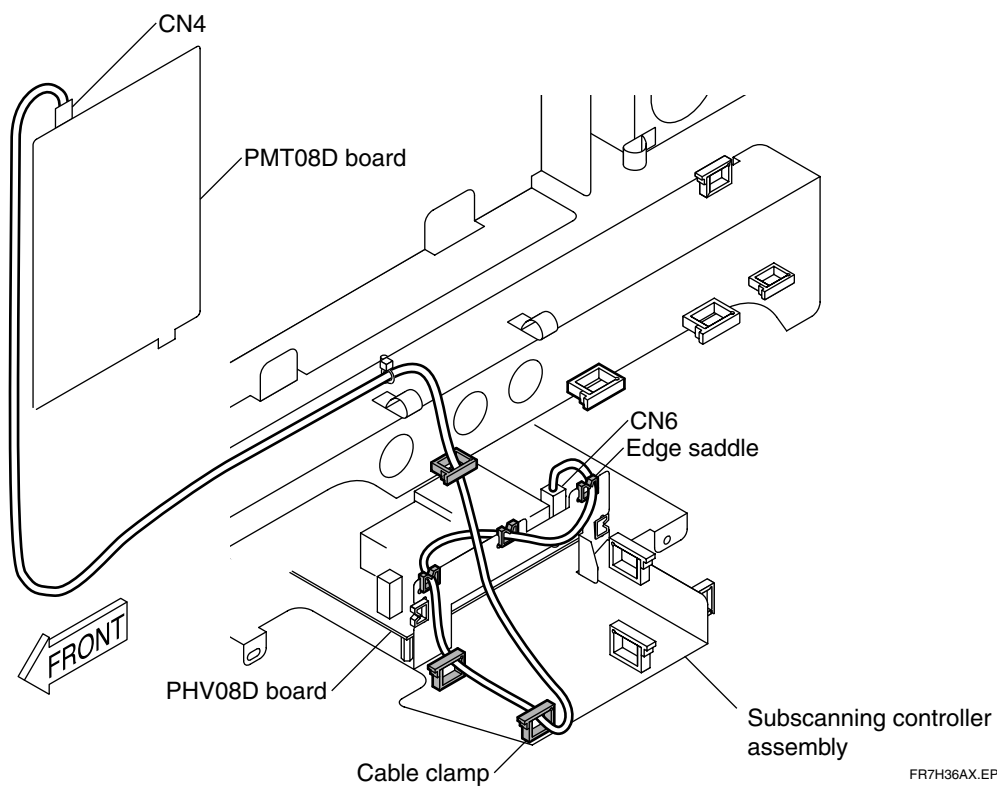


(4) Connect the PHV08D CN7.



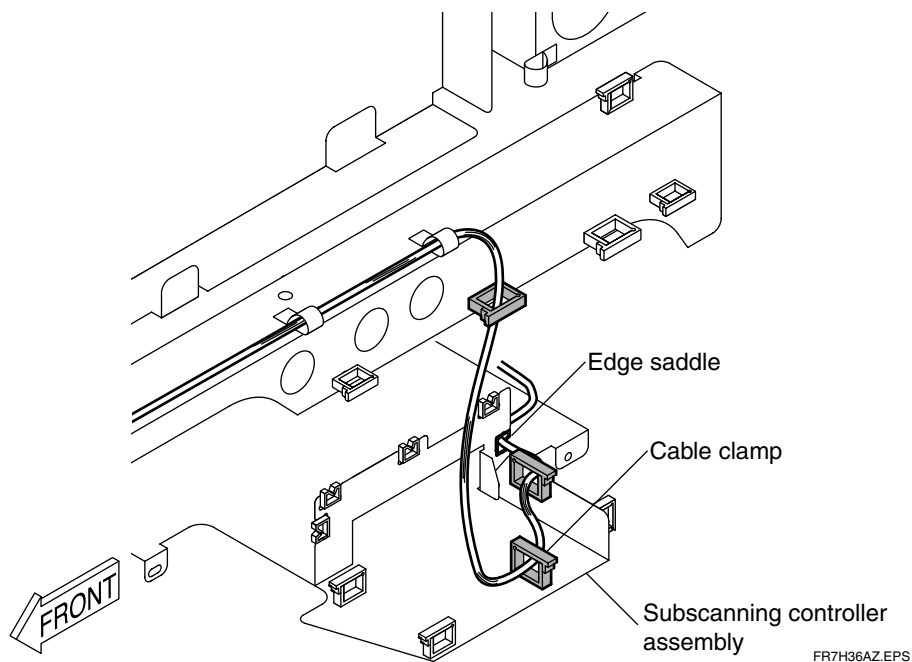
FR7H36AY.EPS

(5) Connect PHV08D CN6.

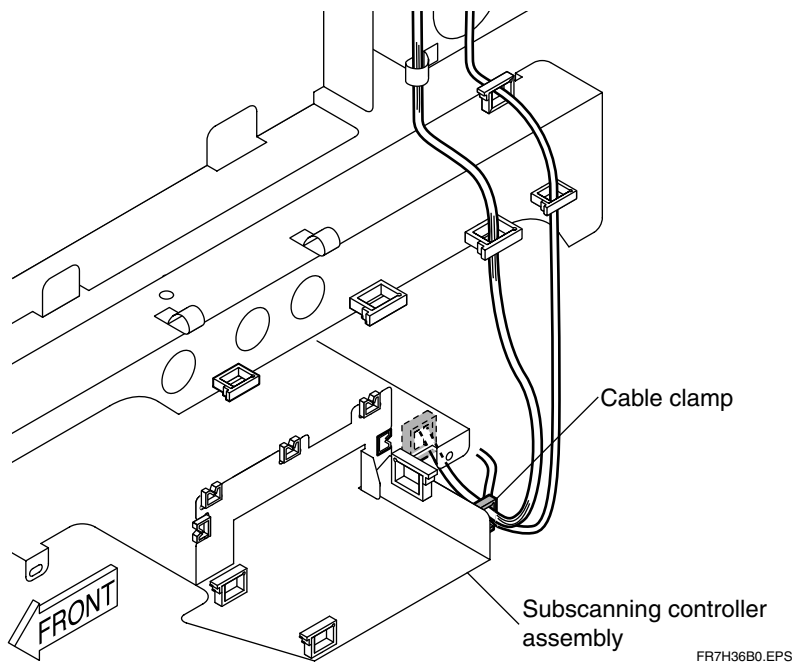


FR7H36AX.EPS

(6) Secure the remaining length of the cable of step (1).



(7) Secure the remaining length of the cable of step (3).



- (8) Using two screws, secure the subscanning controller assembly in place.

◇ **REFERENCE** ◇

---

*For units with serial number 5005 or later, attach three ground cables.*

---

- (9) Connect the following connectors.

- SCN08D CN7–9, 12
- SCR08D CN3, 6
- CN-Z12

- (10) Reinstall the following covers.

- Inner right-hand side cover
- Lower right-hand side cover
- Lower front cover

☞ “3. Removing and Reinstalling Covers

■ **Check procedure**

- Check that the high-voltage switch (S1) on the SCN08D board is ON.
- Check the image.

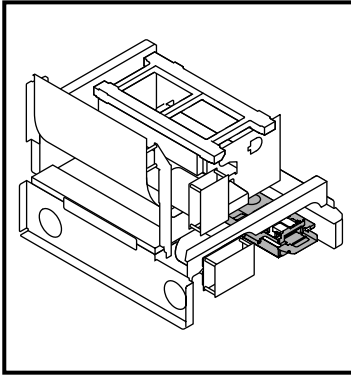
☞ “9.3 Checking for Image Problems”



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## 10.19 SCN08D/SCR08D Board



FR7H30AA.EPS



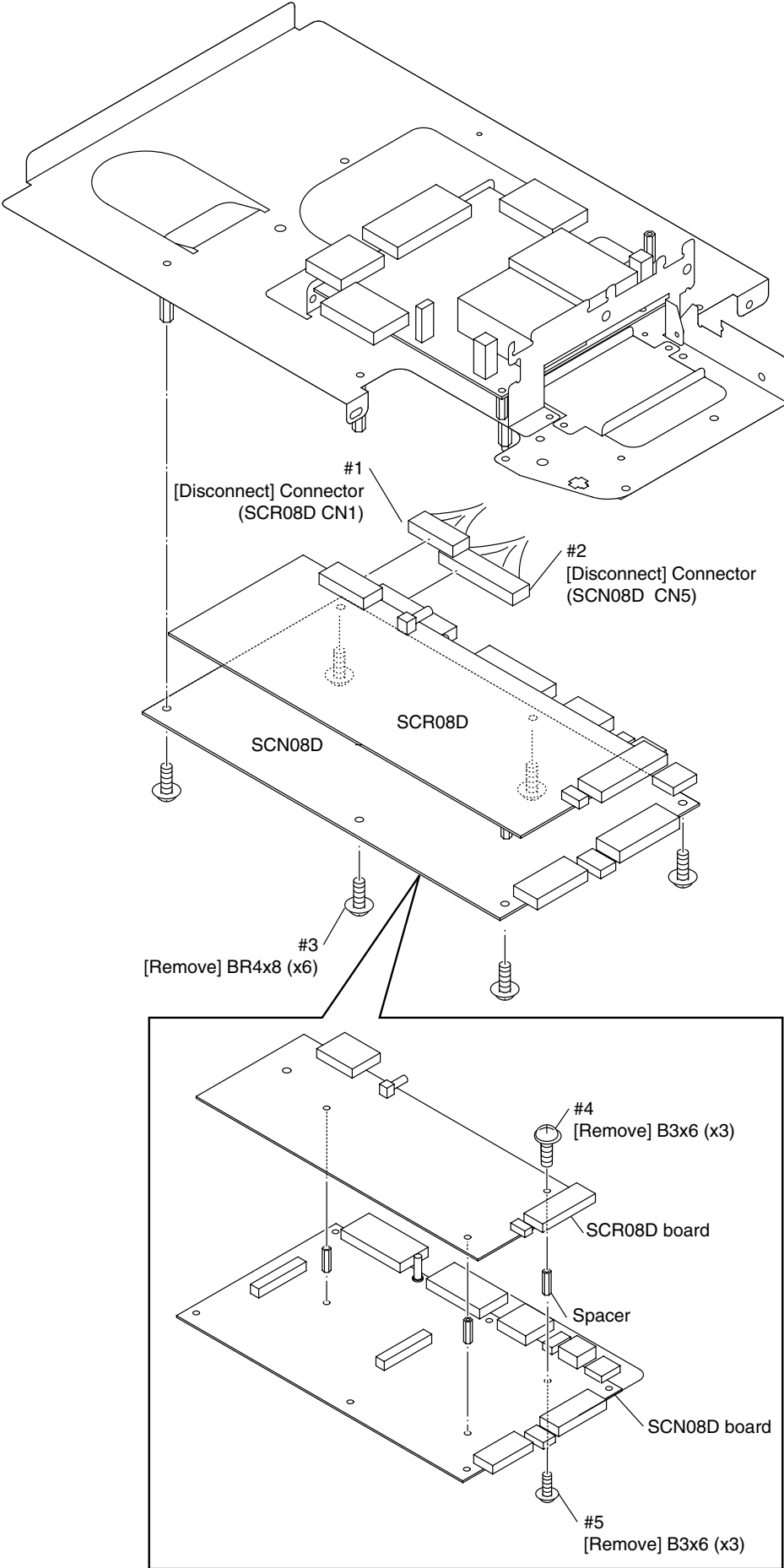
### **CAUTION**

*When servicing any printed circuit board, be sure to wear an anti-static wristband to ensure proper grounding. If not, static electricity built on the human body may cause damage to electric parts mounted on the board.*

### ■ Removal procedure

- (1) Remove the subscanning unit controller assembly.  
☞ “10.18 Subscanning Unit Controller Assembly”

(2) Remove the SCN08D/SCR08D board.

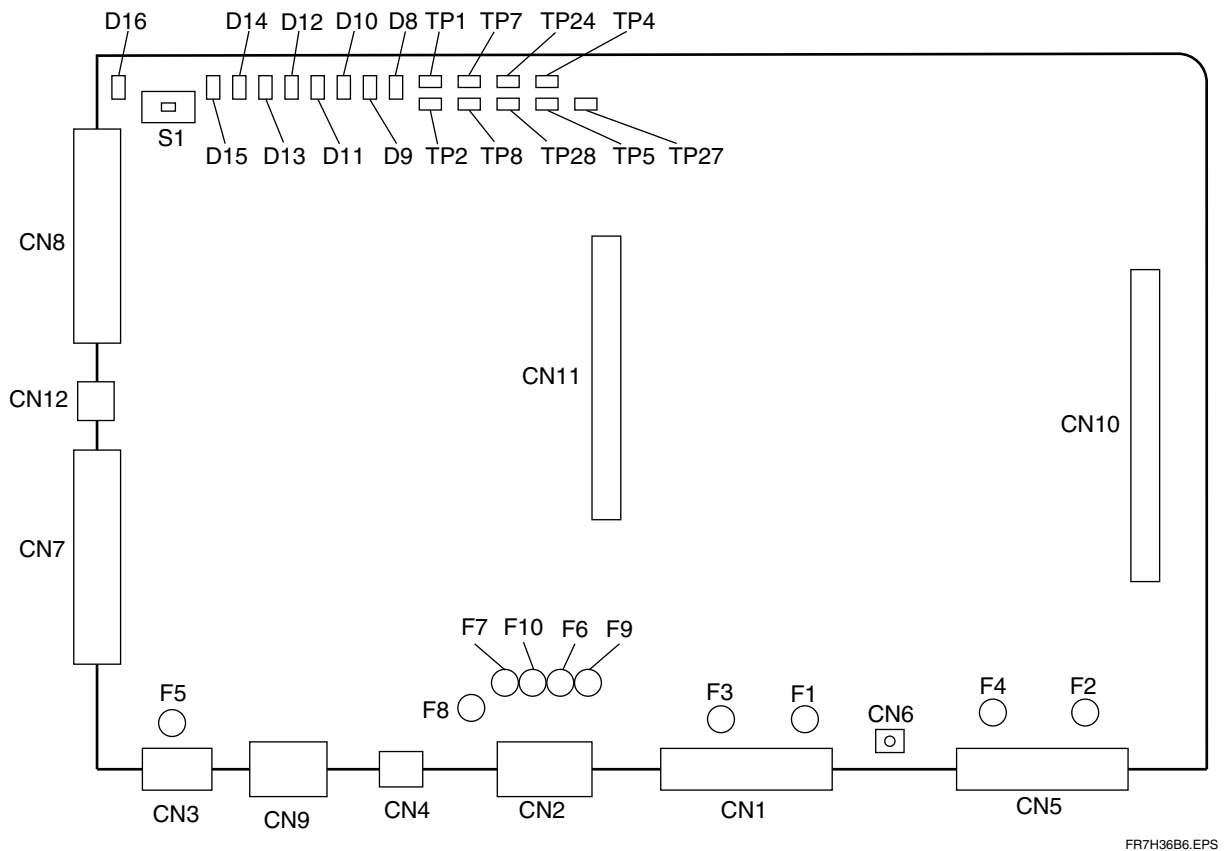


FR7H3666.EPS

## ■ Installation procedure

Accomplish installation by reversing the removal procedure.

## ■ SCN08D board

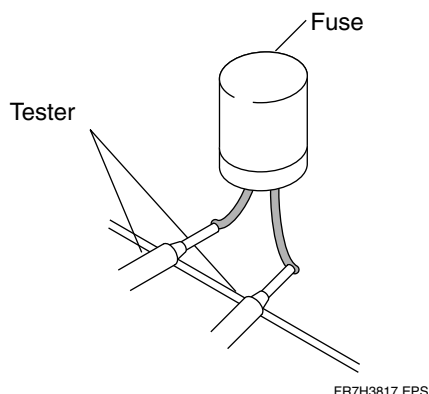


## ■ Fuse Ratings

Location Name	Rated voltage	Rated amperage
F1	250 V	2 A
F2	250 V	2 A
F3	250 V	2 A
F4	250 V	2 A
F5	250 V	1 A
F6	250 V	1 A
F7	250 V	1 A
F8	250 V	1 A
F9	250 V	1 A
F10	250 V	1 A

## ● Checking the Fuses

Measure the resistance value across the fuse. If the measured resistance value is  $100\ \Omega$  or greater, it is judged that the fuse has been blown.



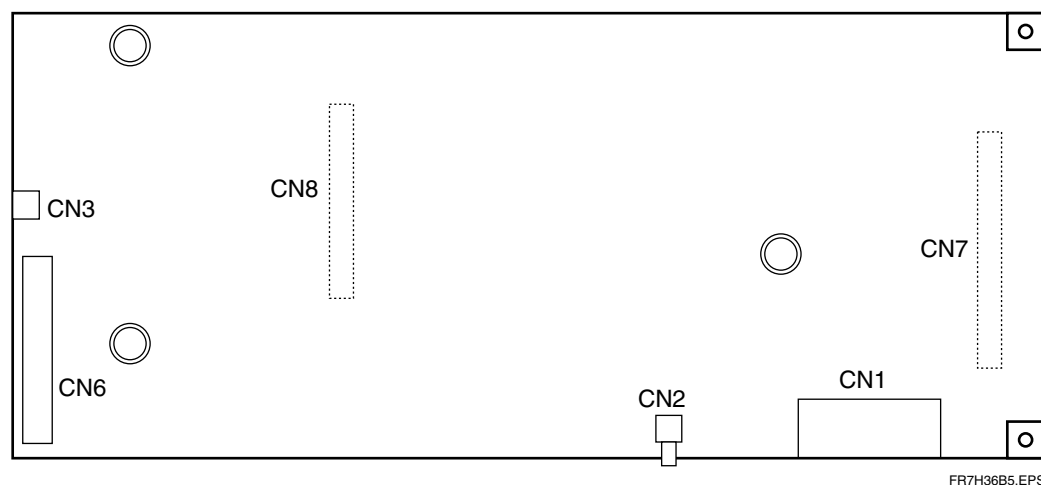
### ◇ SUPPLEMENTARY NOTES ◇

- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.
- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is  $1\ \Omega$  or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.

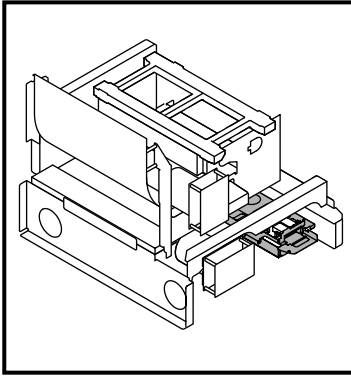
## ● Action to be Taken When the Fuse Has Been Blown

Replace the boards.

### ■ SCR08D board



## 10.20 PHV08D Board



FR7H30AB.EPS



### CAUTION

*When servicing any printed circuit board, be sure to wear an anti-static wristband to ensure proper grounding. If not, static electricity built on the human body may cause damage to electric parts mounted on the board.*

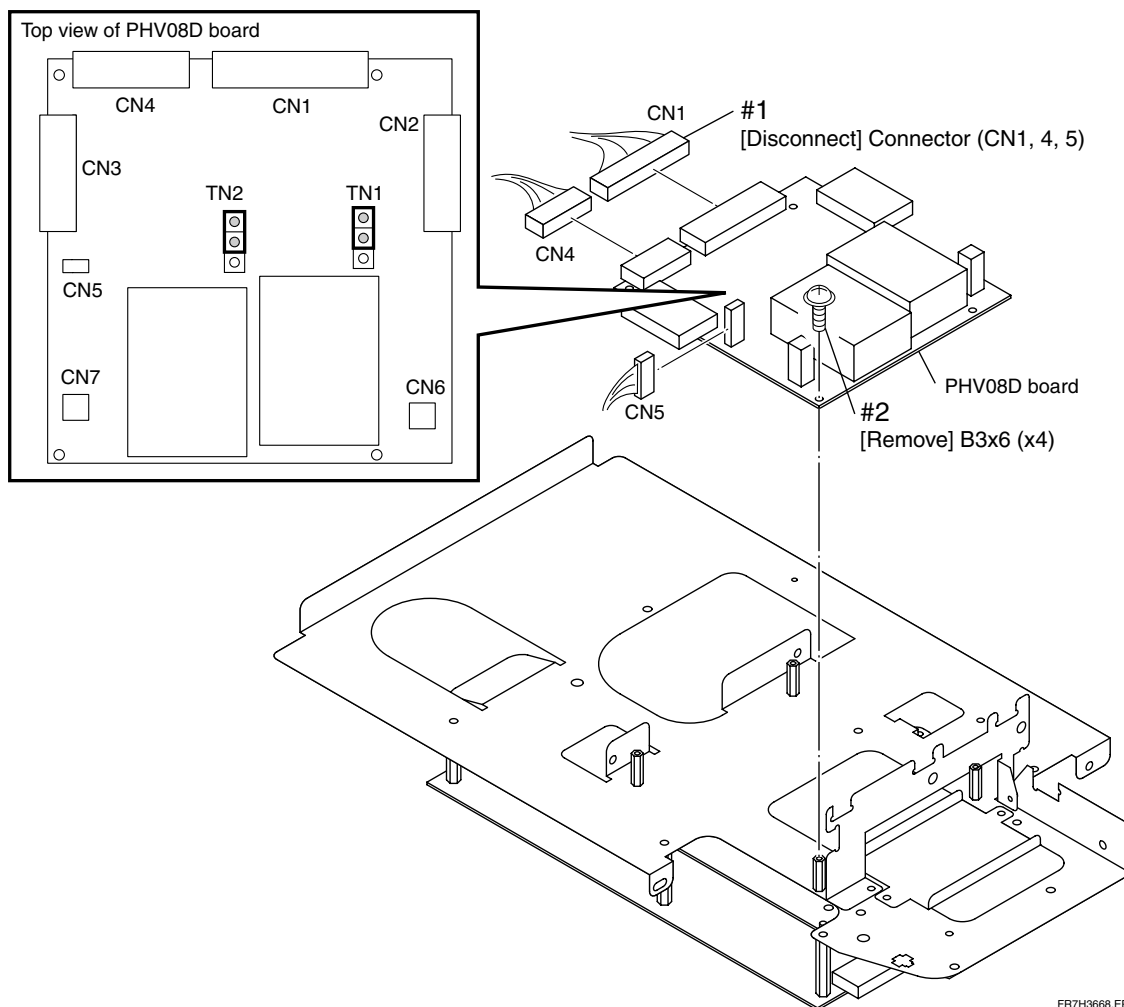
### ■ Removal procedure

- (1) Remove the subscanning unit controller assembly.  
    ☞ “10.18 Subscanning Unit Controller Assembly”
- (2) Remove the PHV08D board.

### ■ Installation procedure

Accomplish installation by reversing the removal procedure.

(2) Remove the PHV08D board.



## ■ Installation procedure

Accomplish installation by reversing the removal procedure.



## 11. Removing and Installing the Hard Disk Drive (HDD)



### CAUTION

*Observe the following precautions because the HDD may be damaged.*

- *Do not shock the HDD.*
- *Do not use a magnet screwdriver.*

The parts number, manufacturer, and model type of the HDD installed are as follows.

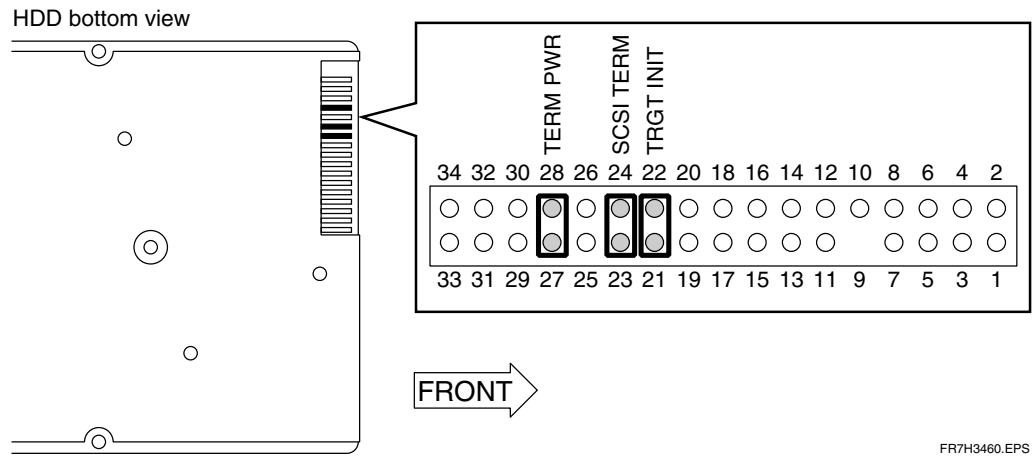
Parts No.	Manufacturer	Model
850S0085	Western Digital	WDE9100
850Y0112	Seagate	ST318416N
850Y0117	Hitachi	DK32DJ-18MW

TR7H3403.EPS

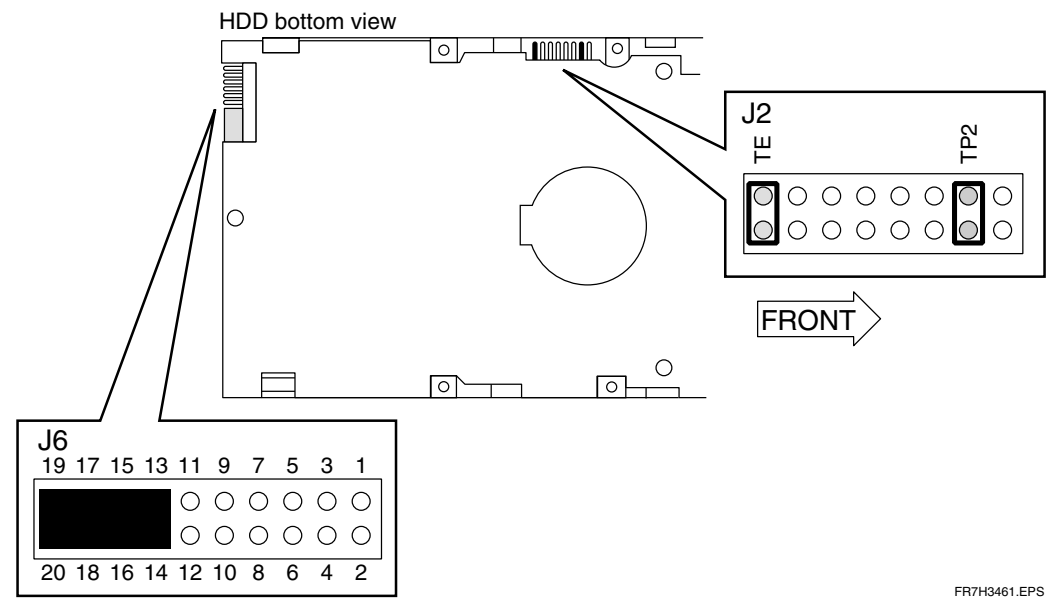
# 11.1 Setting HDD

Short-pin settings for each HDD are illustrated below.

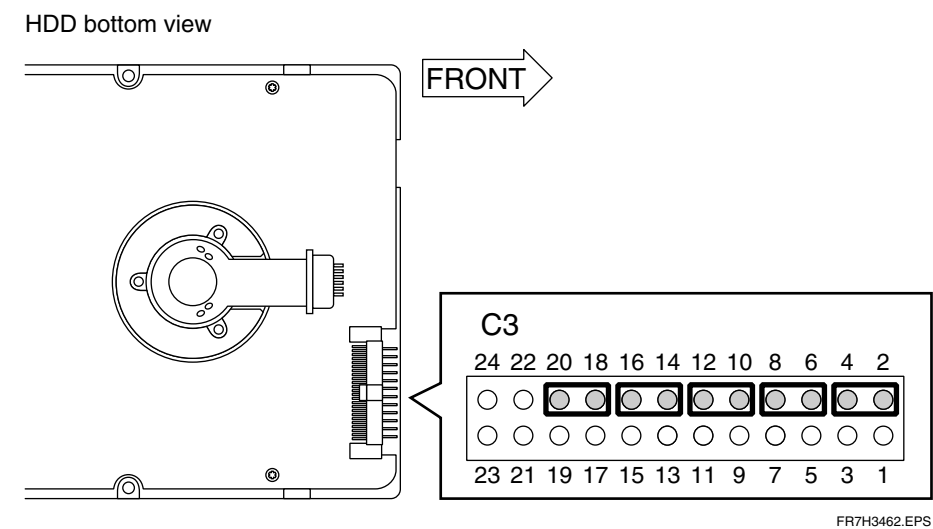
● For 850S0085



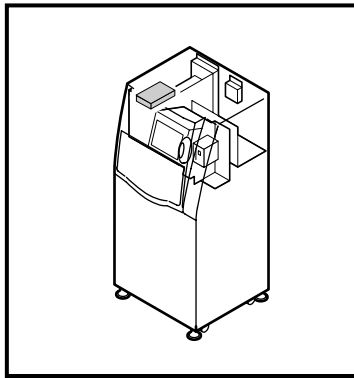
● For 850Y0112



● For 850Y0117



## 11.2 Hard Disk Drive (HDD)

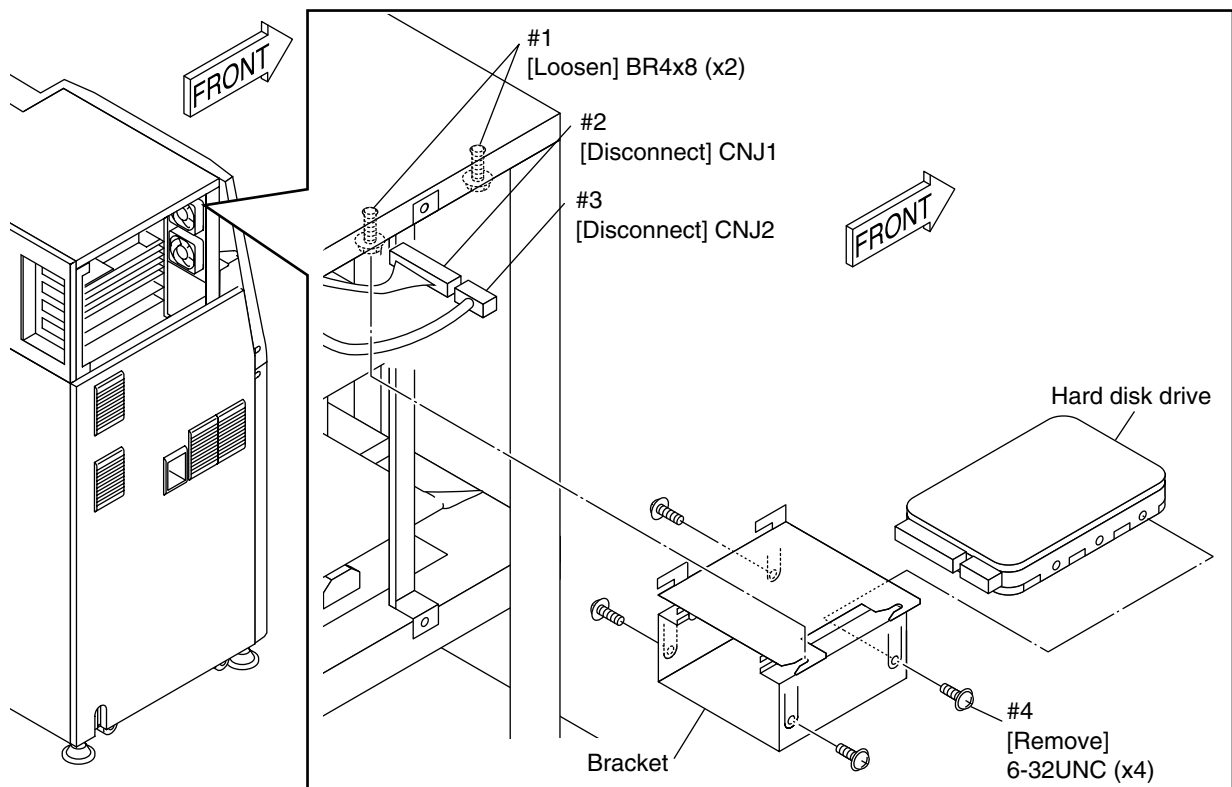


FR7H3088.EPS

### ■ Removal procedure


#### ● For 850S0085, 850Y0112

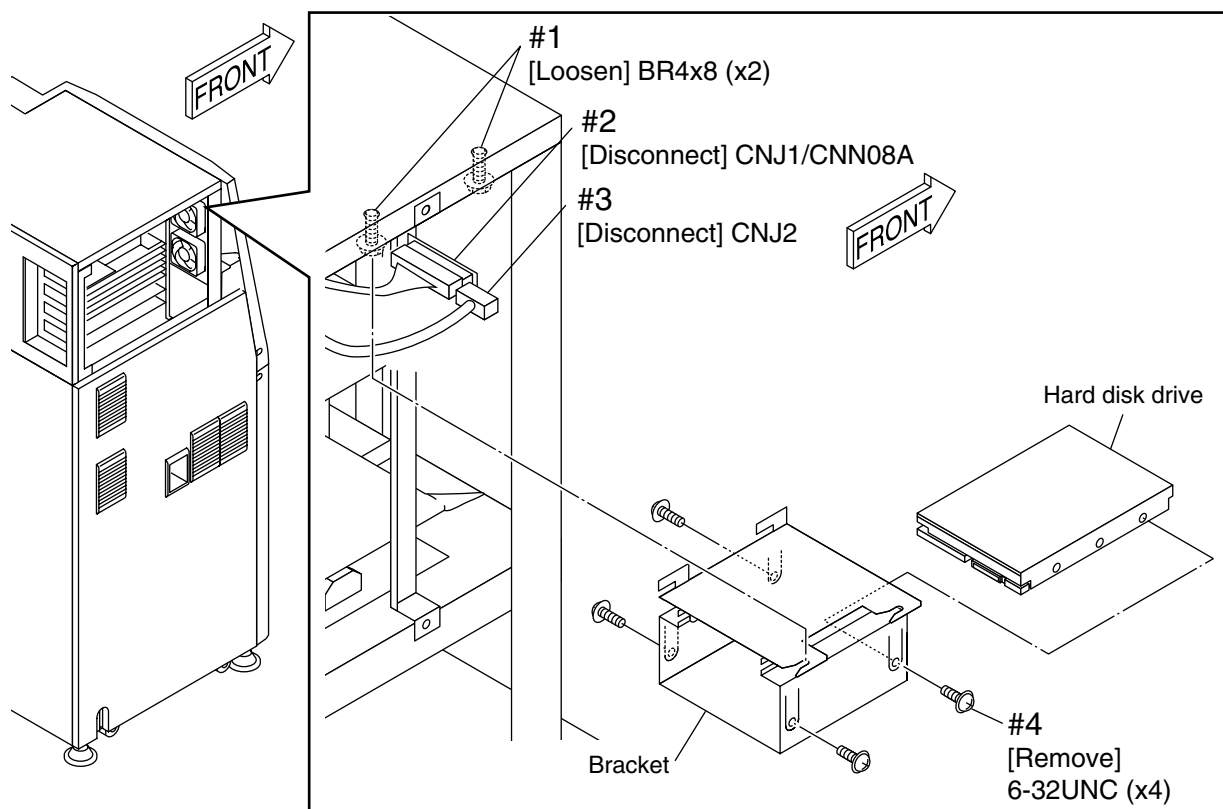
- (1) Remove the following cover:
  - Upper left-hand side cover
- ☞ “3. Removing and Installing the Covers”
- (2) Remove the hard disk drive.



FR7H3401.EPS

**● For 850Y0117**

- (1) Remove the following cover:
  - Upper left-hand side cover “3. Removing and Installing the Covers”
- (2) Remove the hard disk drive.



FR7H3463.EPS

**■ Installation procedure**

Accomplish installation by reversing the removal procedure.

## ■ Replacement procedure

### ● Combinations of replacement parts

The replacement parts and procedures differ depending on the type of the HDD installed.  
The combinations of replacement parts and procedures are summarized in the table below.

Parts number of HDD installed	Parts number of HDD ordered	Procedures needed for replacement	Reference
850S0085 850Y0112	850Y0117 + 898Y0865A (*1)	<ul style="list-style-type: none"> <li>• Attach the sponge tape to the fan bracket.</li> <li>• Replace the fan bracket.</li> <li>• Install the CNN08A.</li> <li>• Attach the sheet to the HDD.</li> <li>• Replace the HDD.</li> </ul>	● For 850S0085 or 850Y0112
850Y0117	850Y0117 + 379N0113A (*2)	<ul style="list-style-type: none"> <li>• Attach the sheet to the HDD.</li> <li>• Replace the HDD.</li> </ul>	● For 850Y0117

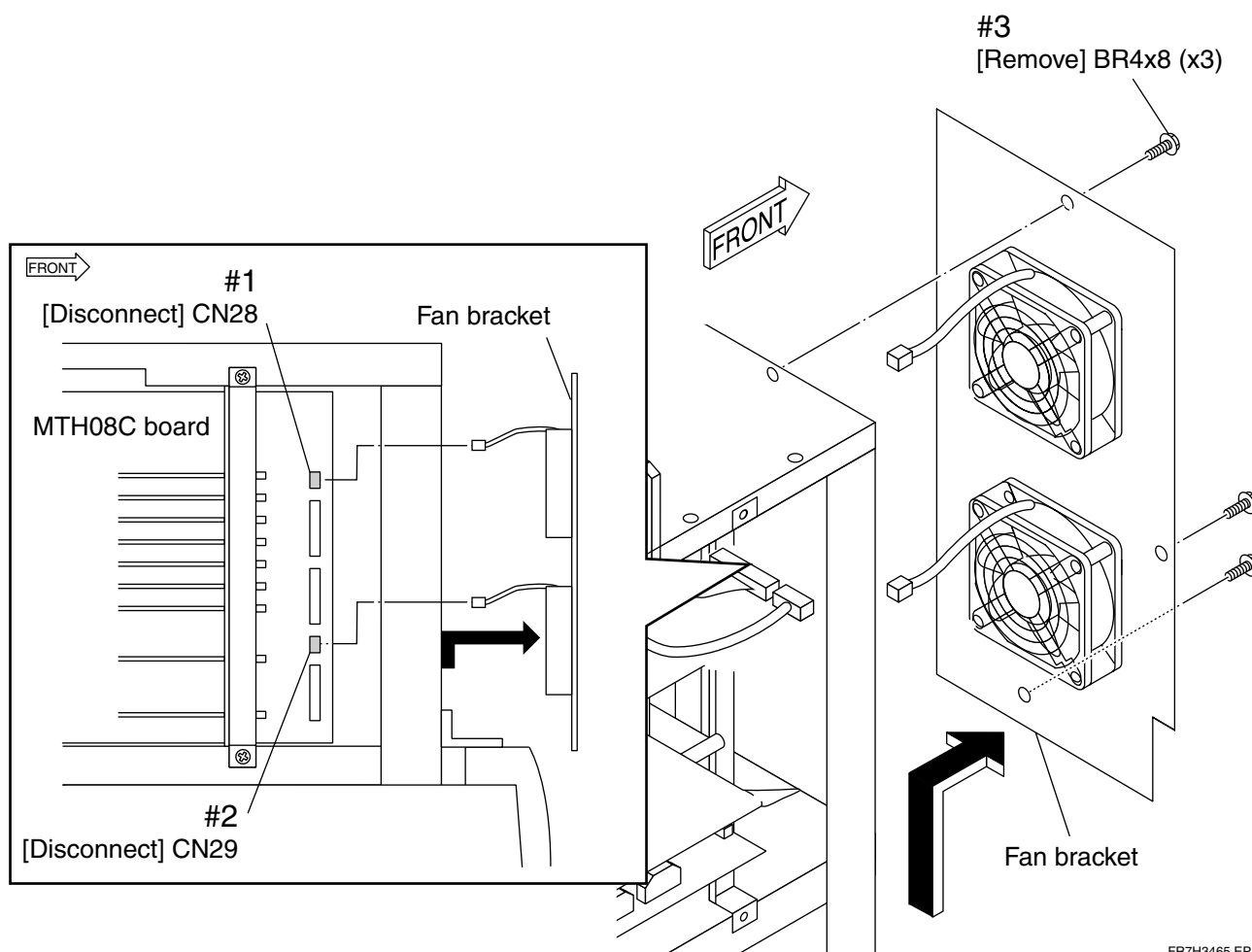
(\*1) 850Y0117 ——— HDD  
 898Y0865A ——— CNN08A  
                   ├—— Sheet  
                   ├—— Fan bracket  
                   └—— Sponge tape

(\*2) 850Y0117 ——— HDD  
 379N0113A ——— Sheet

TR7H3404.EPS

**● For 850S0085 or 850Y0112**

- (1) Remove the HDD.  
☞ “■ Removal procedure”
- (2) Remove the upper front cover.  
☞ “3. Removing and Installing the Covers”
- (3) Remove the fan bracket.

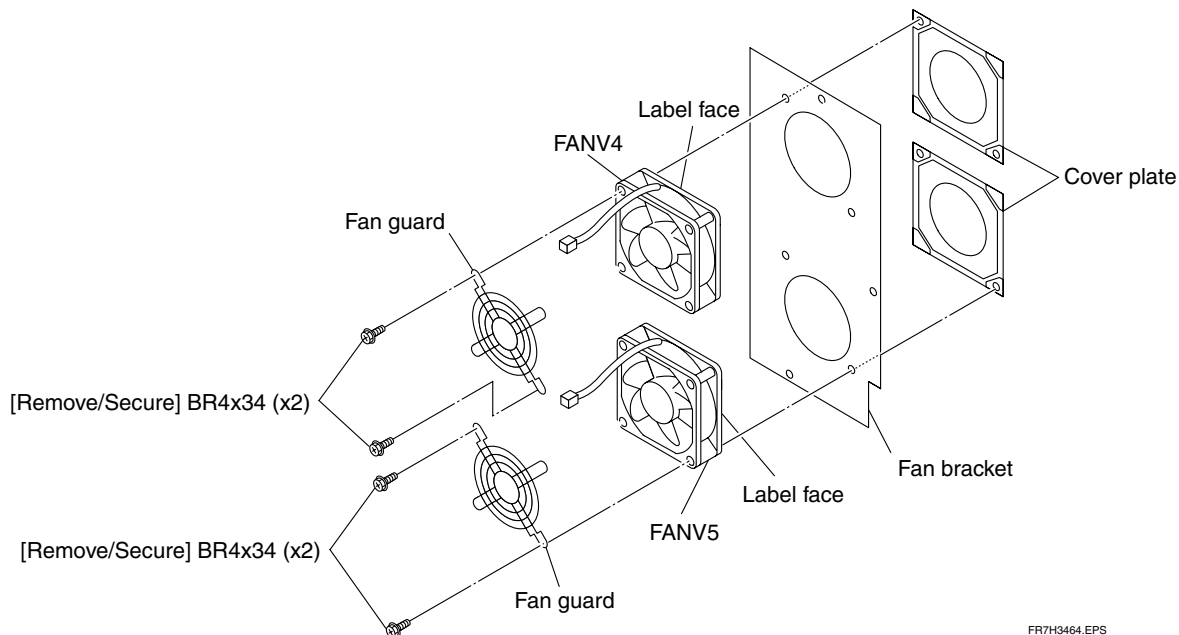


FR7H3465.EPS

(4) Reattach the FANV4 and 5, fan guards and cover plates to a new fan bracket.

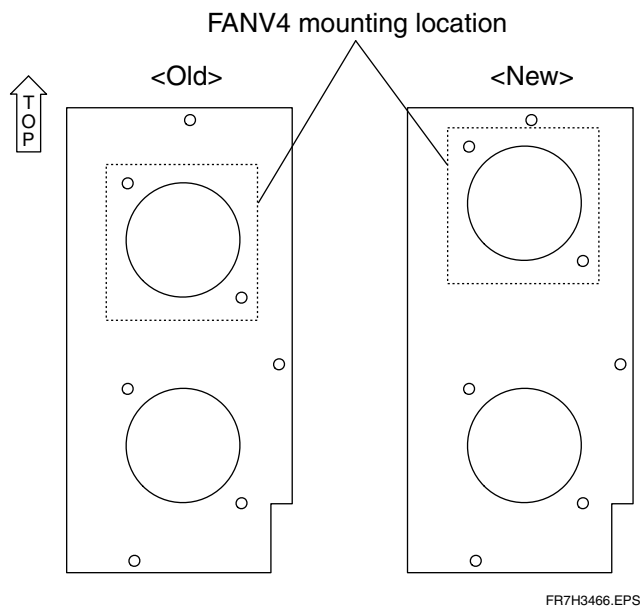
### ◆ INSTRUCTION ◆

*When attaching the fan, orient its label face as illustrated below.*



### ◇ REFERENCE ◇

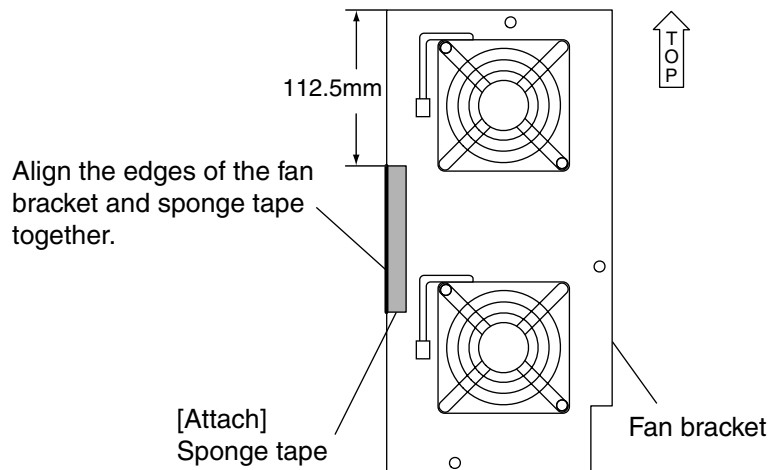
*The new fan bracket has its FANV4 mounting location about 2 cm higher than the old one.*



(5) Attach the sponge tape.

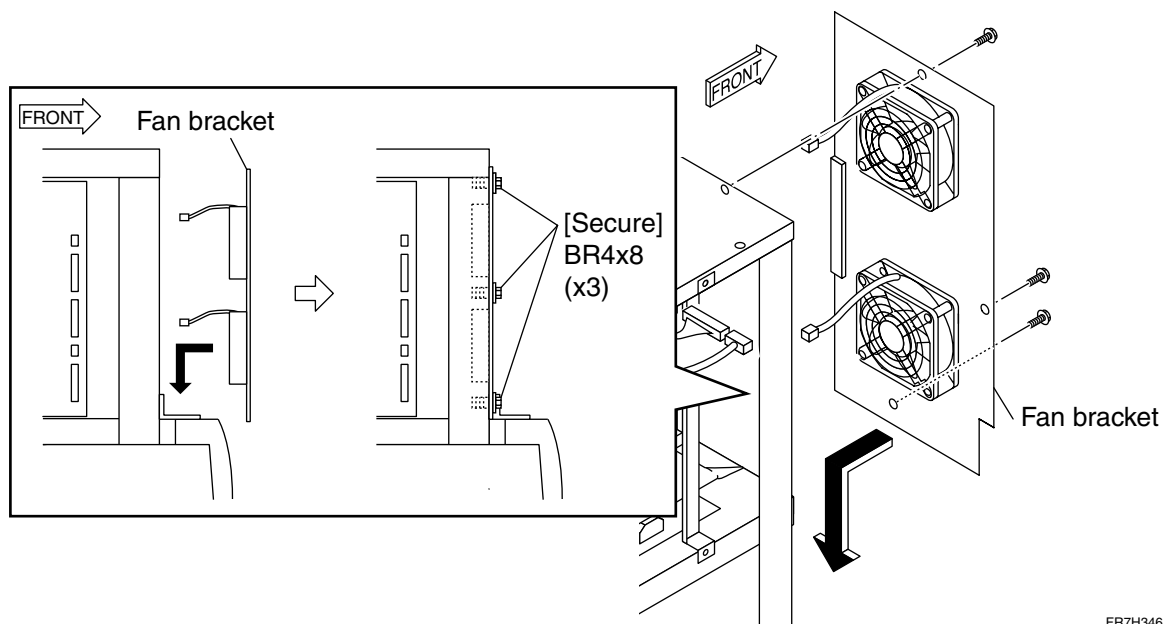
◆NOTES◆

- When attaching the sponge tape, align the edges of the fan bracket and sponge tape together.
- Attach the sponge tape 112.5 mm away from the top end of the fan bracket.



FR7H3467.EPS

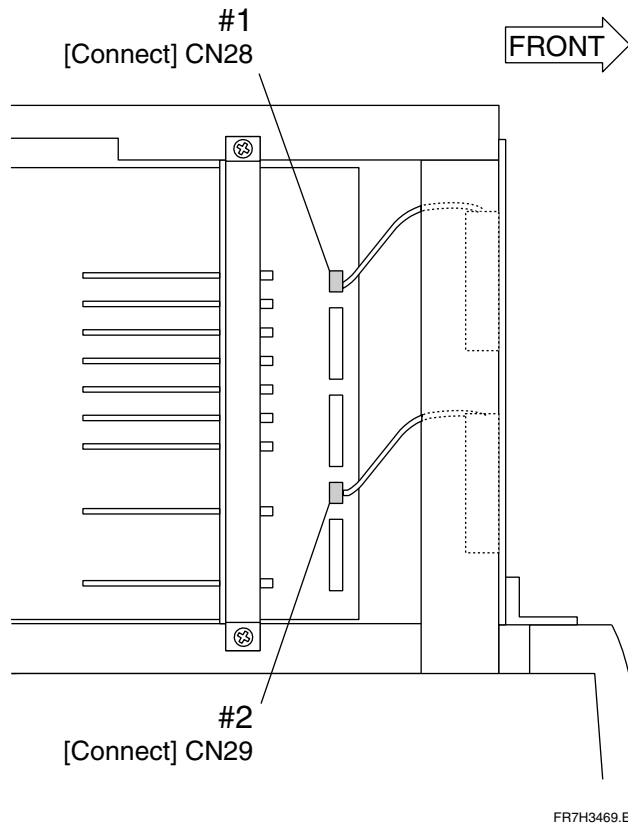
(6) Install the fan bracket.



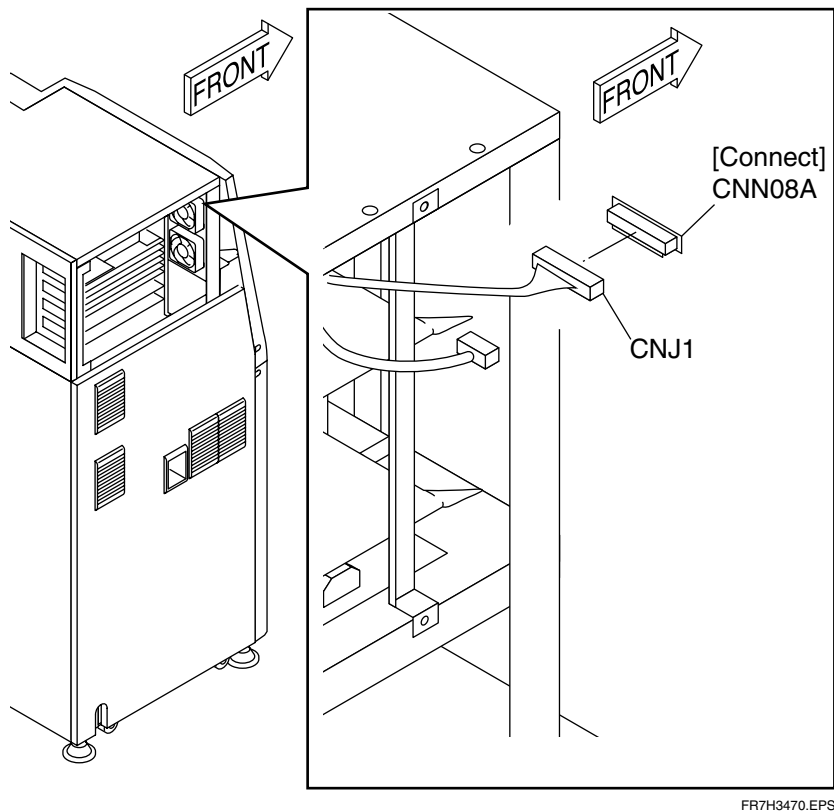
FR7H3468.EPS



(7) Connect the connectors.



(8) Connect the CNN08A.

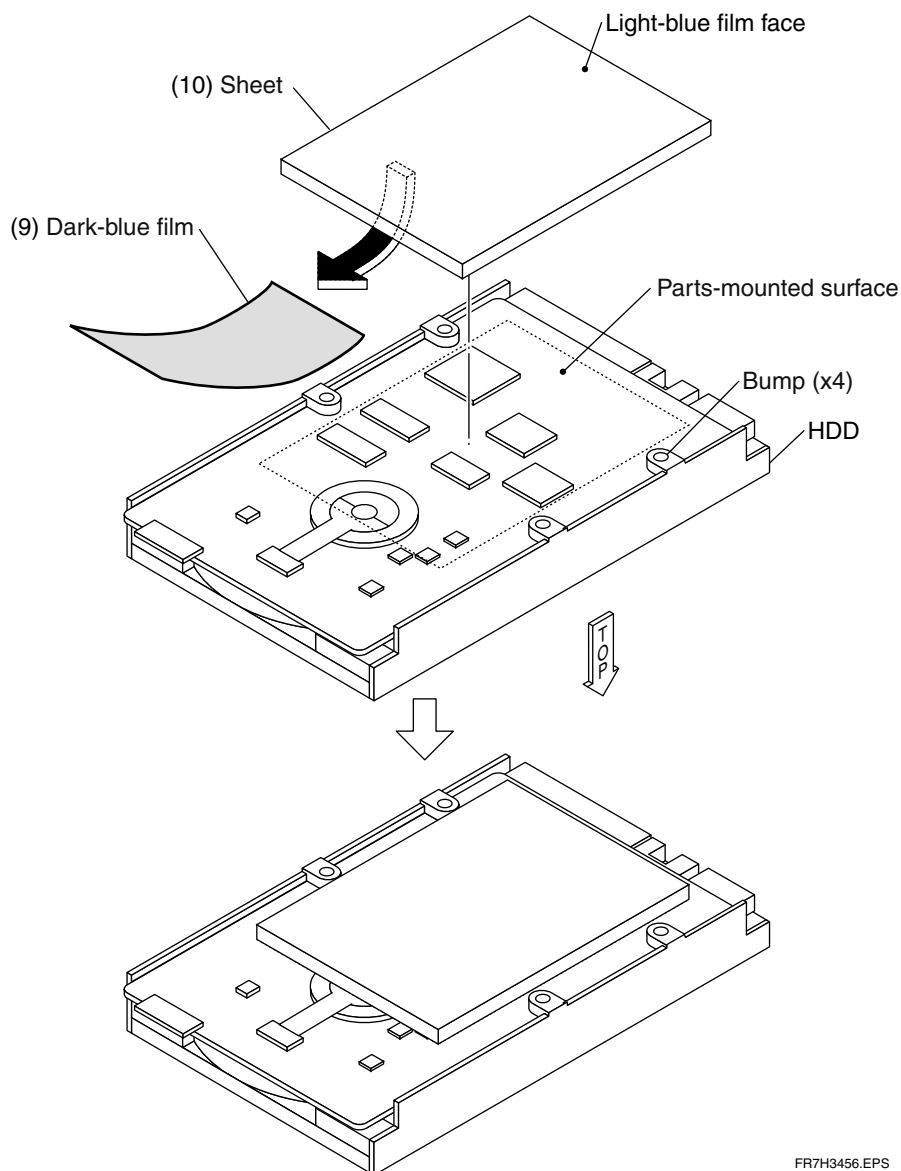


- (9) Peel the dark-blue film off the sheet.
- (10) Attach the sheet to the parts-mounted surface of the HDD.





### CAUTIONS

- Do not attach the light-blue film face of the sheet to the parts-mounted surface of the HDD. Also ensure that the sheet does not come atop any of the bumps of the HDD. If it is attached to the parts-mounted surface, a short-circuit may occur.
- Do not attach the sheet retaining plate used for 850Y0112 to a new HDD. For 850Y0117, the sheet retaining plate is not used.



FR7H3456.EPS

- (11) Install the HDD.  
 "■ Installation procedure"
- (12) Make adjustment after replacement.  
 "■ Check/adjustment procedure"

### ● For 850Y0117

- (1) Remove the HDD.

☞ “■ Removal procedure”

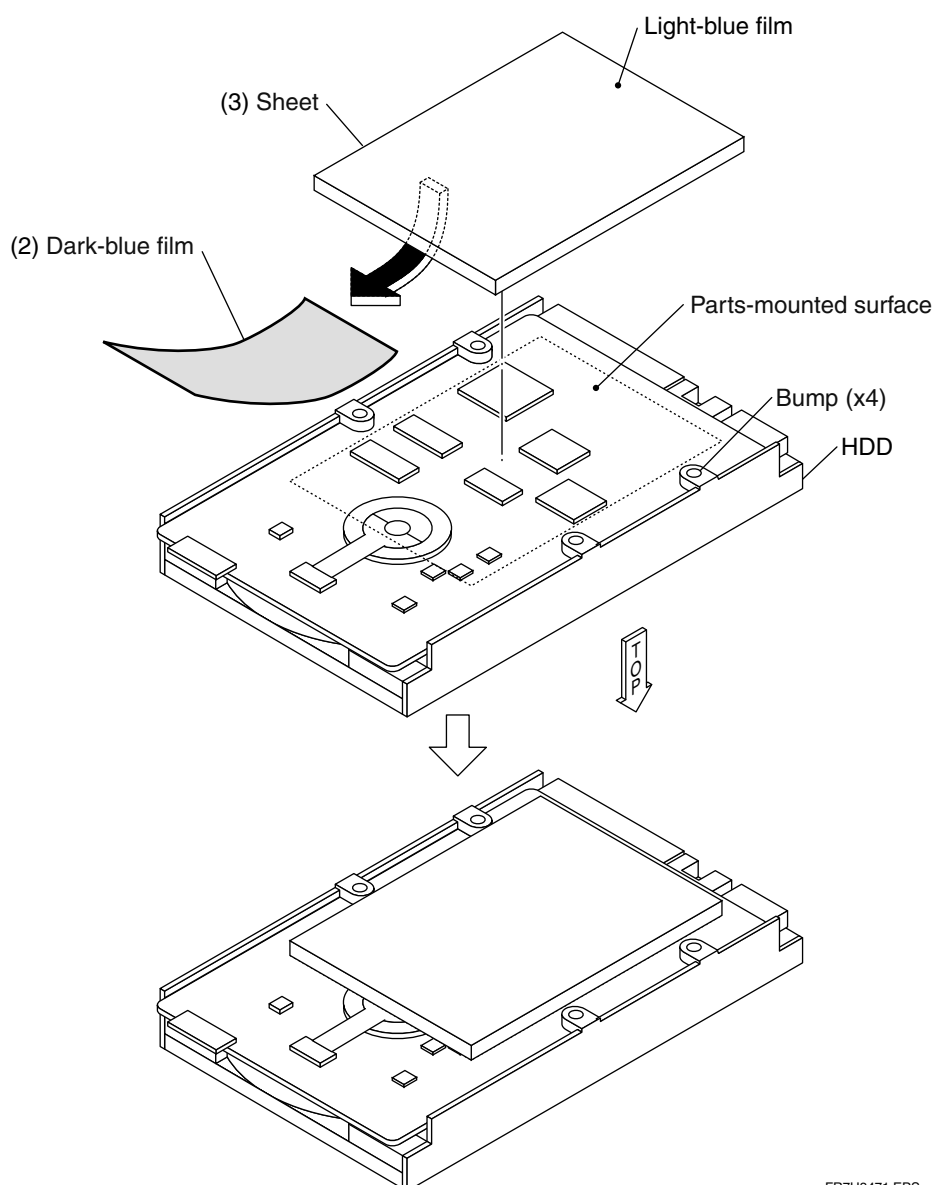
- (2) Peel the dark-blue film off the new sheet.

- (3) Attach a new sheet to the parts-mounted surface of the HDD.



### CAUTIONS

*Do not attach the light-blue film face of the sheet to the parts-mounted surface of the HDD. Also ensure that the sheet does not come atop any of the bumps of the HDD. If it is attached to the parts-mounted surface, a short-circuit may occur.*



FR7H3471.EPS

- (4) Install the HDD.

☞ “■ Installation procedure”

- (5) Make adjustment after replacement..

☞ “■ Check/adjustment procedure”

## ■ Check/adjustment procedure

After hard disk drive replacement, format the hard disk drive and install software with the FORMAT and INSTALL system disks and data disks.

- (1) Turn OFF the machine.
- (2) Insert the FORMAT system disk into the floppy disk drive.
- (3) Turn ON the machine.
  - ◇ The hard disk drive formatting process starts.

### ◇ REFERENCES ◇

- *It takes 20 to 30 minutes to format the hard disk drive.*
- *Upon completion of hard disk drive formatting, the following message appears on the panel:*

\*\*\*\*\* Formatting is complete. \*\*\*\*\*

\*\*\*\*\* Please power off. \*\*\*\*\*

FR7H3450.EPS

- (4) Turn OFF the machine.
- (5) Remove the FORMAT system disk from the floppy disk drive.
- (6) Insert the INSTALL system disk into the floppy disk drive.
- (7) Turn ON the machine.
  - ◇ The software installation process starts.
- (8) Follow the instructions appearing on the panel to replace the INSTALL system disk with the data disks.

### ◇ REFERENCES ◇

- *Follow the instructions appearing on the panel to replace the inserted data disk in numerical order.*
- *Upon completion of software installation, the following message appears on the panel.*

Install is complete.

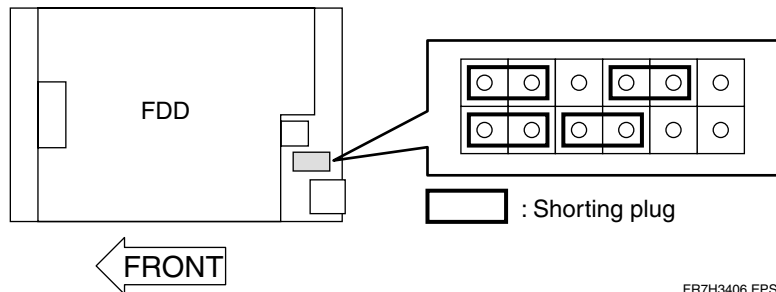
FR7H3451.EPS

- (9) Turn the machine OFF and then back ON to verify that the machine starts up normally.

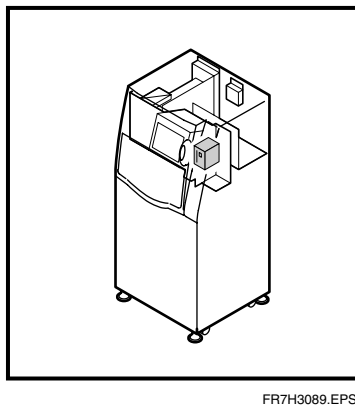
## 12. Removing and Installing the Floppy Disk Drive (FDD)

### 12.1 Setting FDD

The setting of the shorting plugs for the FDD is illustrated below.



### 12.2 Floppy Disk Drive (FDD)



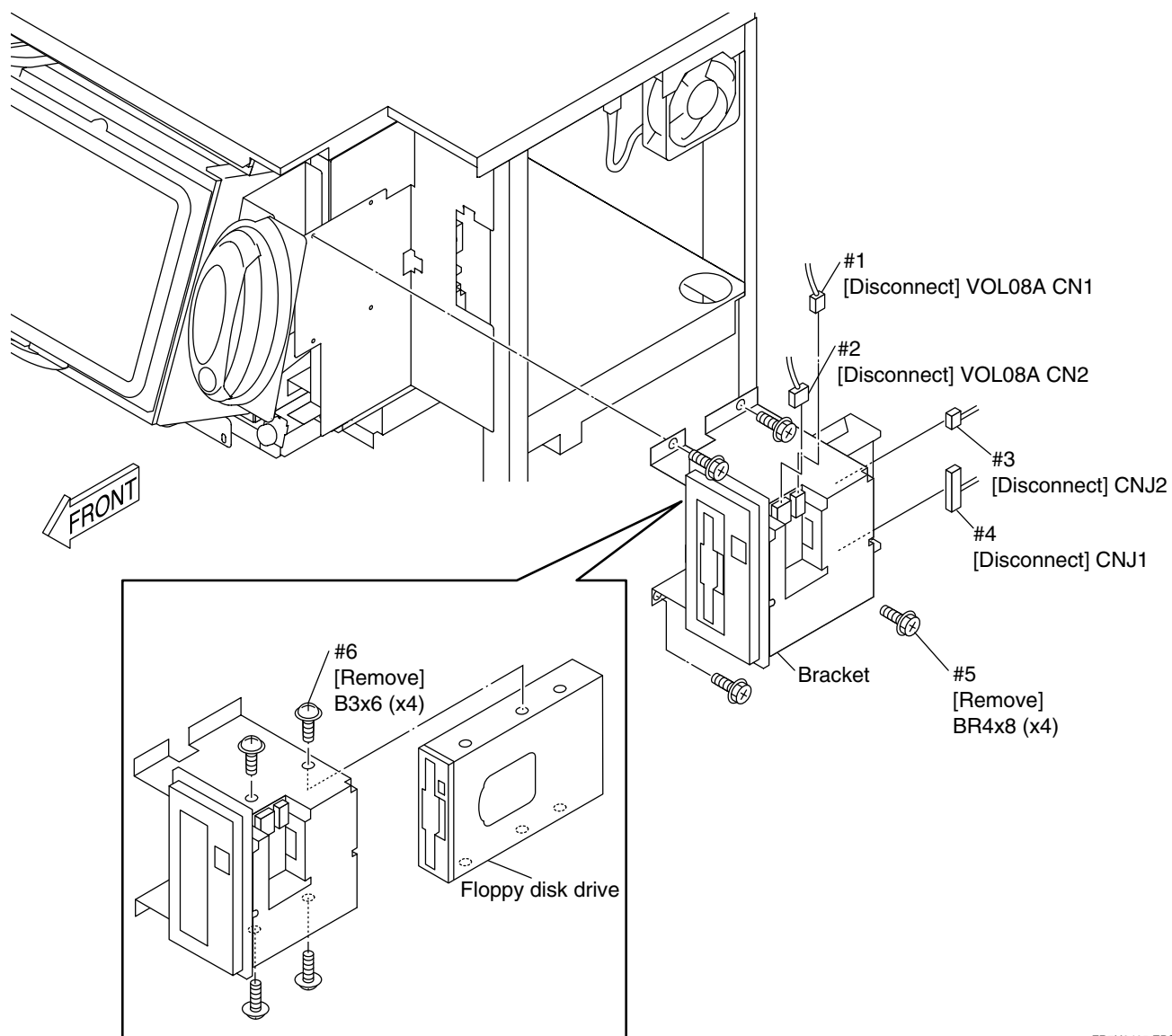
#### ■ Removal procedure

(1) Remove the following covers:

- Upper right-hand side cover
- Upper left-hand side cover
- Upper front cover

☞ “3. Removing and Installing the Covers”

(2) Remove the floppy disk drive.



FR7H3405.EPS

## ■ Installation procedure

### ◆INSTRUCTION◆

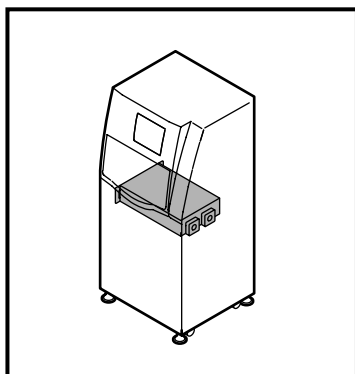
Verify that the shorting pins on the floppy disk drive are properly jumpered.

☞ "12.1 Setting FDD"

To accomplish installation, reverse the removal procedure.

# 13. Removing and Installing the Power Supply Unit (JPS-6)

## 13.1 Power Supply Unit (JPS-6)

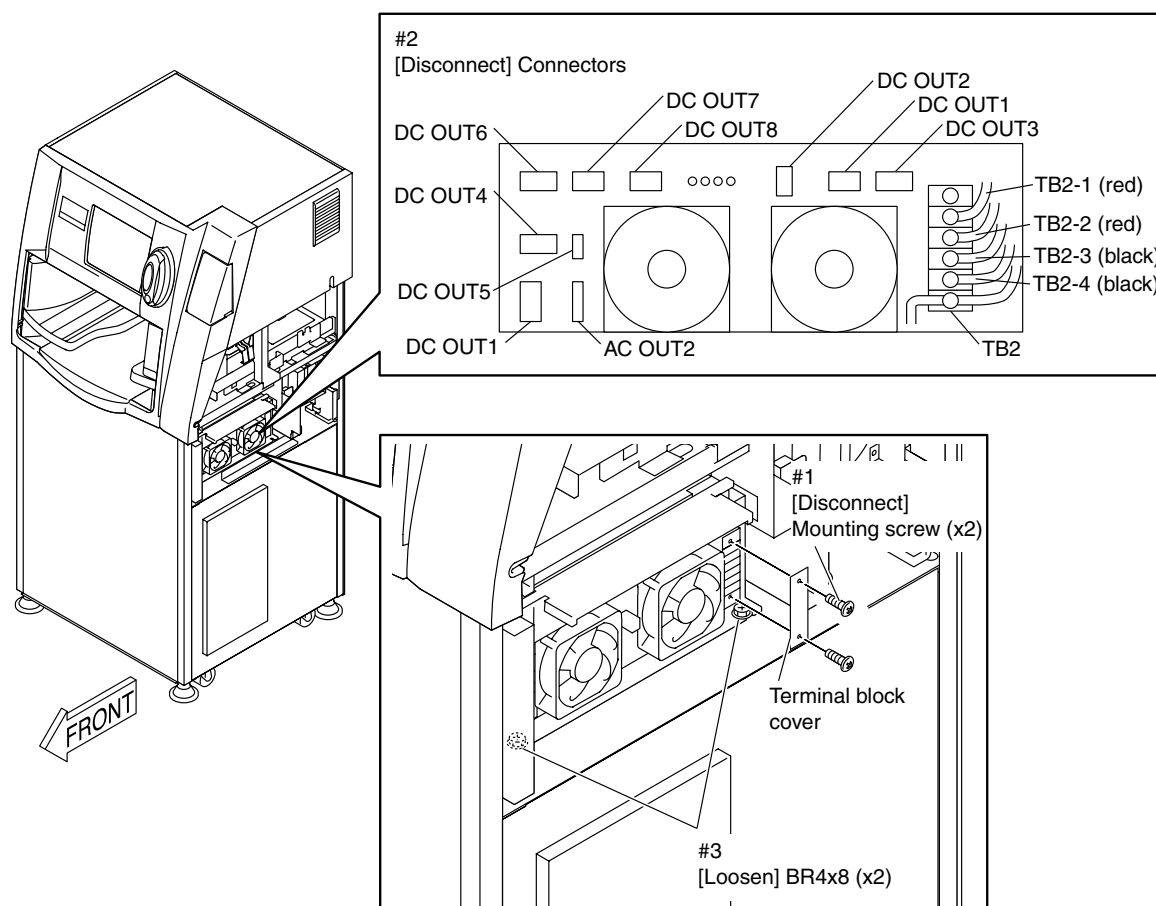


FR7H3093.EPS

### ■ Removal procedure

- (1) Remove the following covers:
  - Lower front cover
  - Lower right-hand side cover
  - Left-hand inner cover

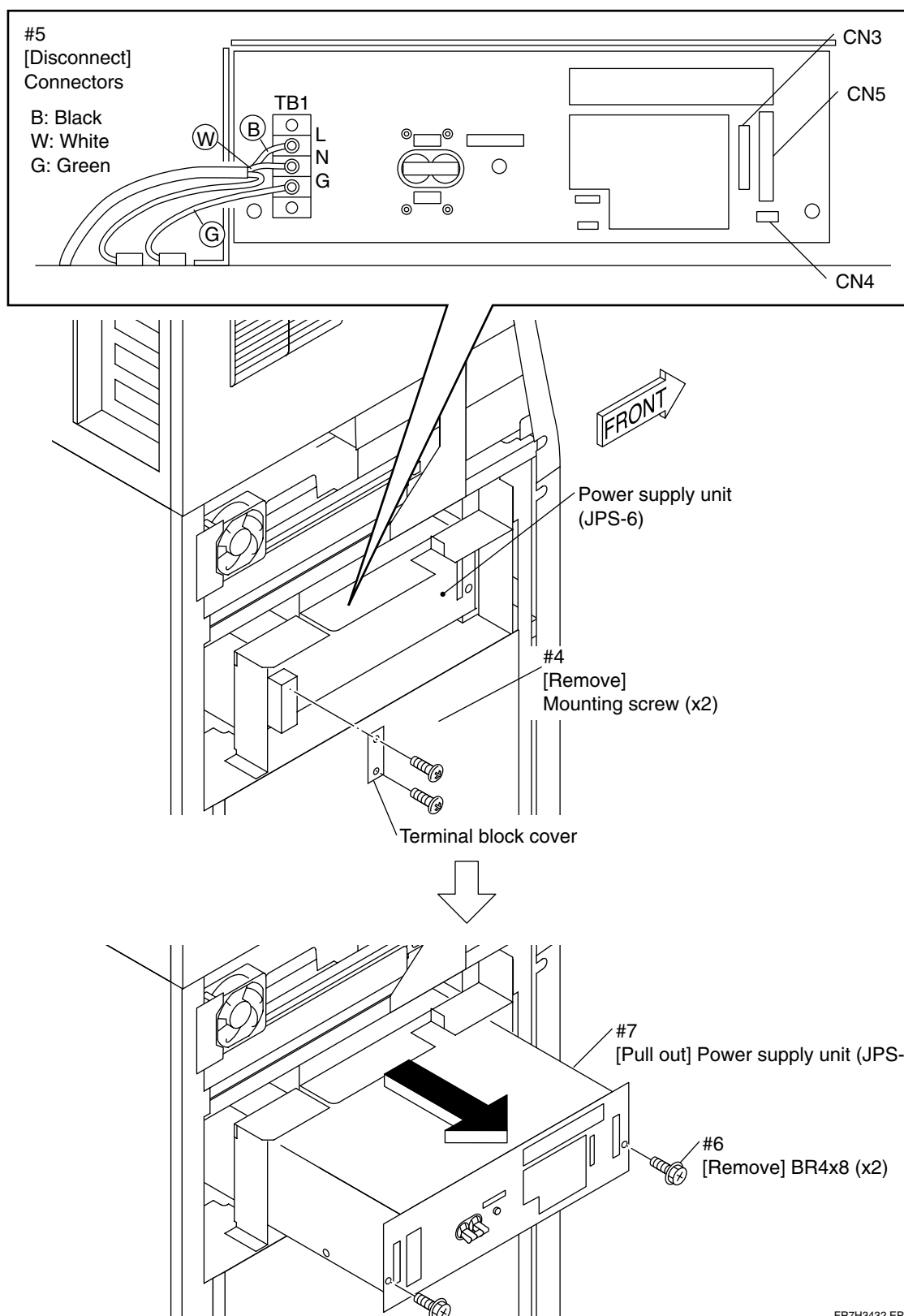
“3. Removing and Installing the Covers”
- (2) Remove the JPS-6.



FR7H3431.EPS

# ◇ REFERENCE ◇

When removing the mounting screws, unclamp the cables.



## ■ Installation procedure

Accomplish installation by reversing the removal procedure.



## ■ Check procedure



### **WARNING**

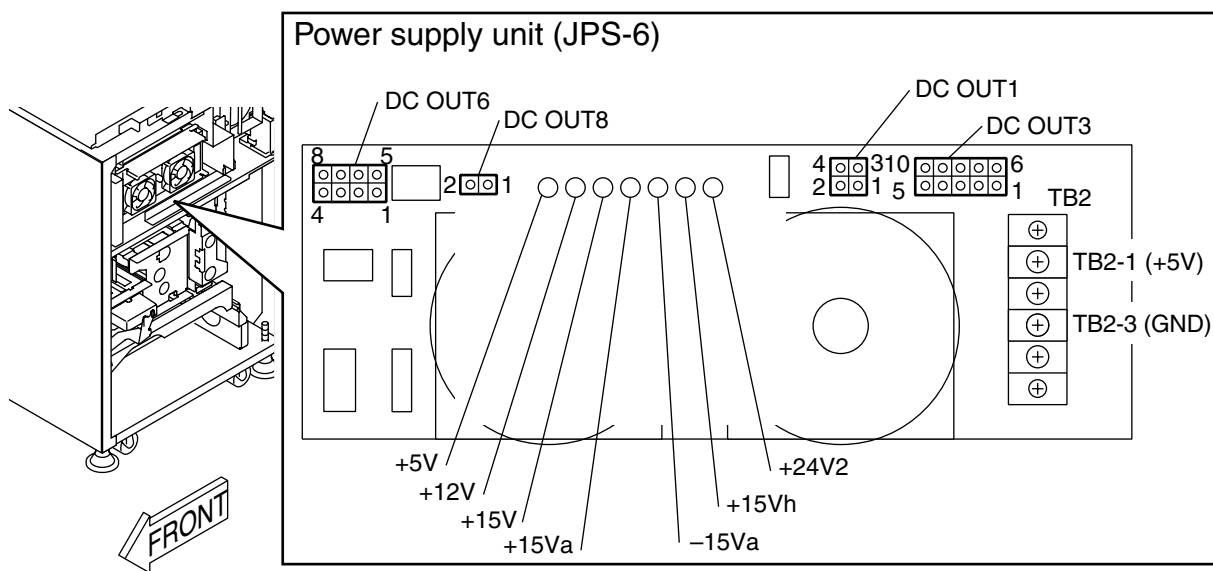
To avoid electrical shock hazards from high voltage, observe the following precautions:

- Do not touch the power supply terminals.
- When making voltage measurements, do not touch the probes (metal portions) of the employed tester.

Make voltage measurements at the following locations. If any measured voltage is outside the standard value range, rotate the associated voltage adjustment trimmer to make adjustments.

Measurement location	Standard value	Voltage adjustment trimmer
JPS-6 DC OUT8 1-2	14.5 – 15.5V	+15Vh
DC OUT1 1-3	12.0 – 12.6V	+12V
DC OUT3 1-6	14.5 – 15.5V	+15V
DC OUT3 4-9	23.0 – 25.0V	+24V2
DC OUT6 2-6	14.5 – 15.5V	+15Va
DC OUT6 3-7	-14.5 – -15.5V	-15Va
TB2 1-3	5.1 – 5.3V	+5V

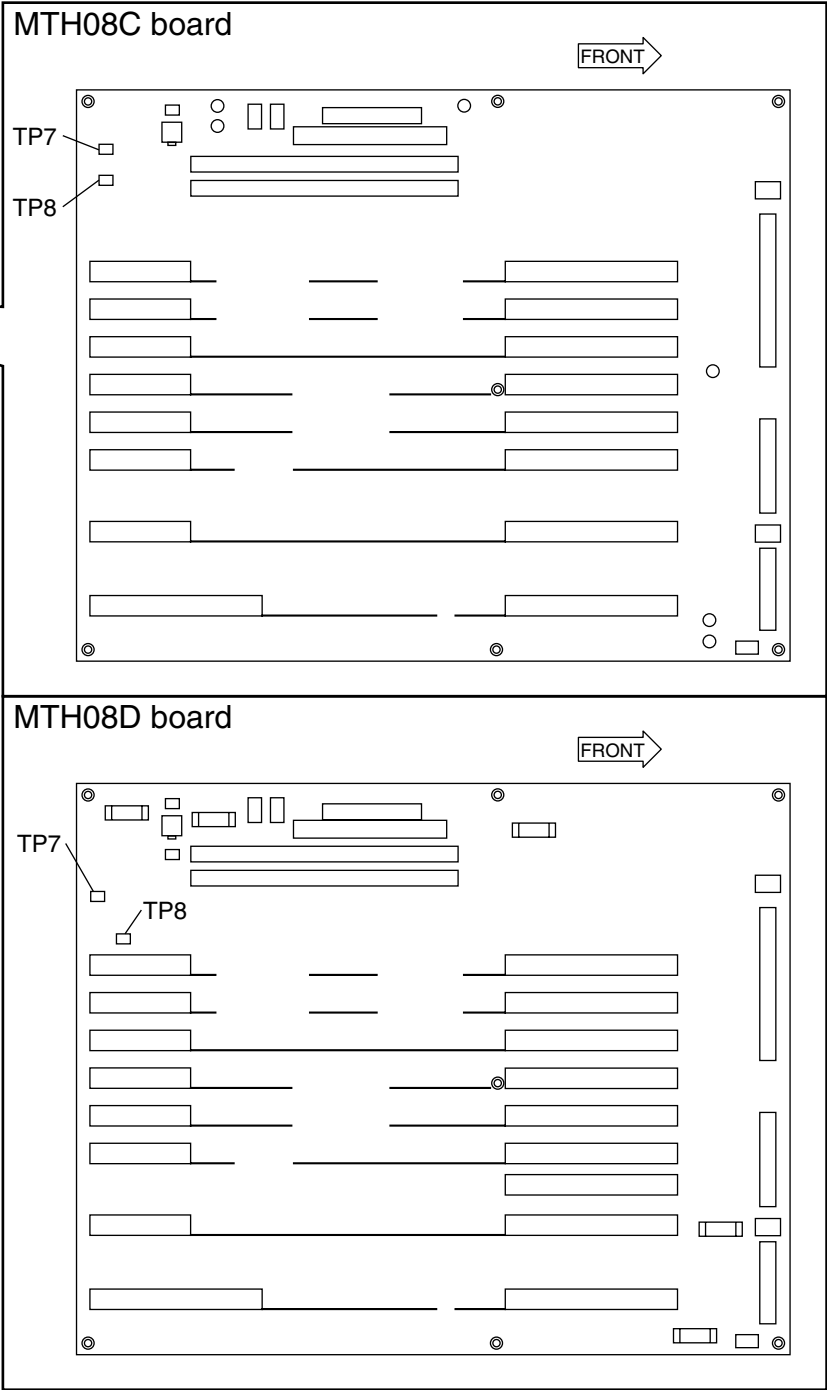
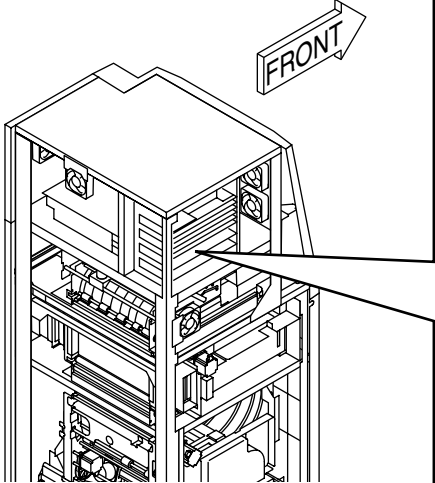
TR7H3401.EPS



FR7H3454.EPS

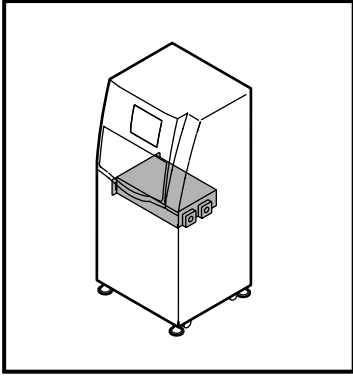
Measurement location	Standard value	Voltage adjustment trimmer
MTH08C/D TP7-TP8	5.00 – 5.10V	+5V

TR7H3402.EPS



FR7H3455.EPS

## 13.2 Power Supply Unit Fuses



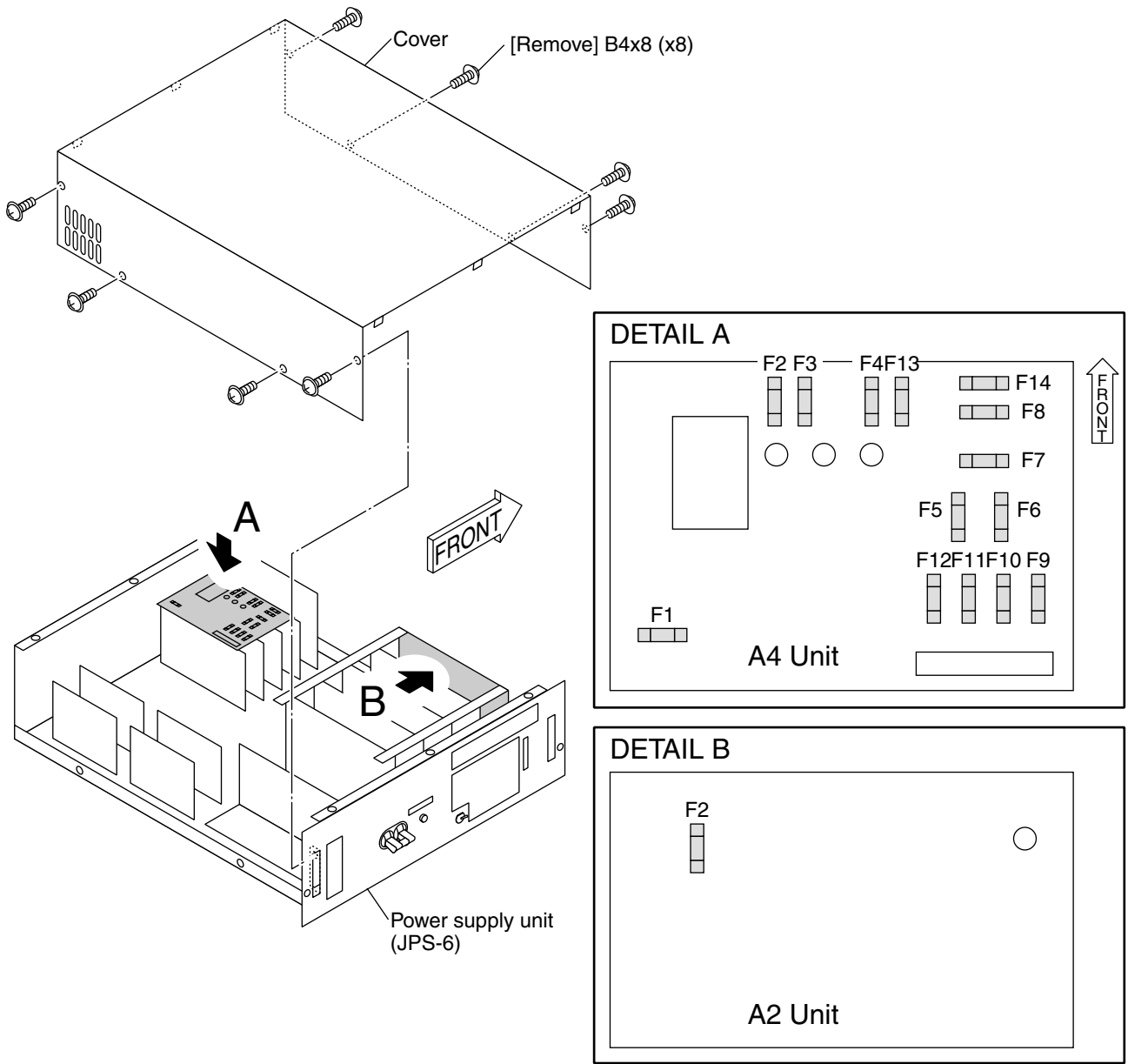
FR7H3094.EPS

### ■ Removal procedure

- (1) Remove the power supply unit (JPS-6).

☞ “13.1 Power Supply Unit (JPS-6)”

(2) Remove the power supply unit fuses.



FR7H3433.EPS

## ■ Installation procedure

Accomplish installation by reversing the removal procedure.

## ■ List of power supply unit fuses

### ● A4 unit

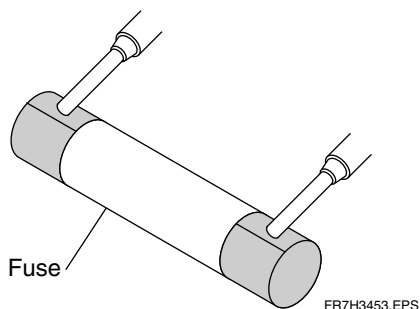
Name	Voltage/current rating	Remarks
F1	250 V, 5 A	For SCN08D +5 V (DCOUT6)
F2	250 V, 4 A	For DRV08A +15 V (DCOUT3)
F3	250 V, 4 A	For FFM +15 V (DCOUT7)
F4	250 V, 500 mA	For FFM +5 V (DCOUT7)
F5	250 V, 500 mA	For erasure lamp cooling fan +24 (DCOUT5)
F6	250 V, 2 A	For SCN08D +24 V (DCOUT6)
F7	250 V, 5 A	For SCN08D +15 V (DCOUT6)
F8	250 V, 5 A	For SCN08D -15 V (DCOUT6)
F9	250 V, 4 A	For DRV08A +24 V (DCOUT3)
F10	250 V, 4 A	For DRV08A +24 V (DCOUT3)
F11	250 V, 4 A	For DRV08A +24 V (DCOUT3)
F12	250 V, 4 A	For DRV08A +24 V (DCOUT3)
F13	250 V, 5 A	For SNS08D +5 V (DCOUT2)
F14	250 V, 4 A	For PHV08D +15 Vh (DCOUT8)

### ● A2 unit

Name	Voltage/current rating	Remarks
F2	250 V, 500 mA	For LED08A +5 Vp

## ■ Checking the fuses

Measure the resistance value across the fuse. If the measured resistance value is  $100\ \Omega$  or greater, it is judged that the fuse has been blown.



### ◇ SUPPLEMENTARY NOTE ◇

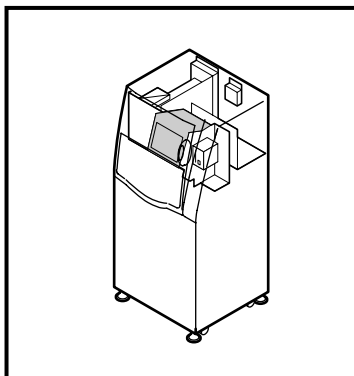
*For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.*

## ■ Action to be Taken When the Fuse Has Been Blown

Replace the fuses.

## 14. Removing and Installing the Monitor

### 14.1 CRT (Monitor)




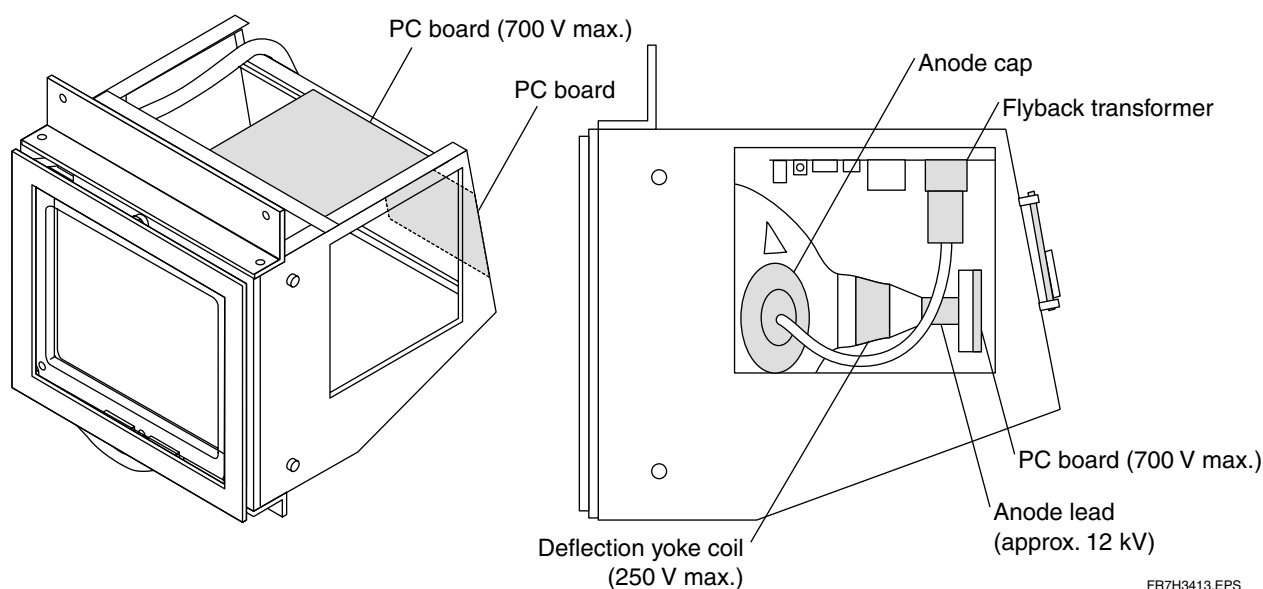
FR7H3092.EPS



#### WARNINGS

- When replacing the monitor, be sure to turn OFF the circuit breaker. If you replace the monitor with the circuit breaker ON, you may receive a shock.
- Since the monitor contains sections where a high voltage is generated (see the figure below), never touch them. If any foreign matter enters the monitor, be sure to remove it. Allowing such foreign matter to stay within the monitor will cause a risk of fire or electric shock.


 : Never touch the shaded sections.

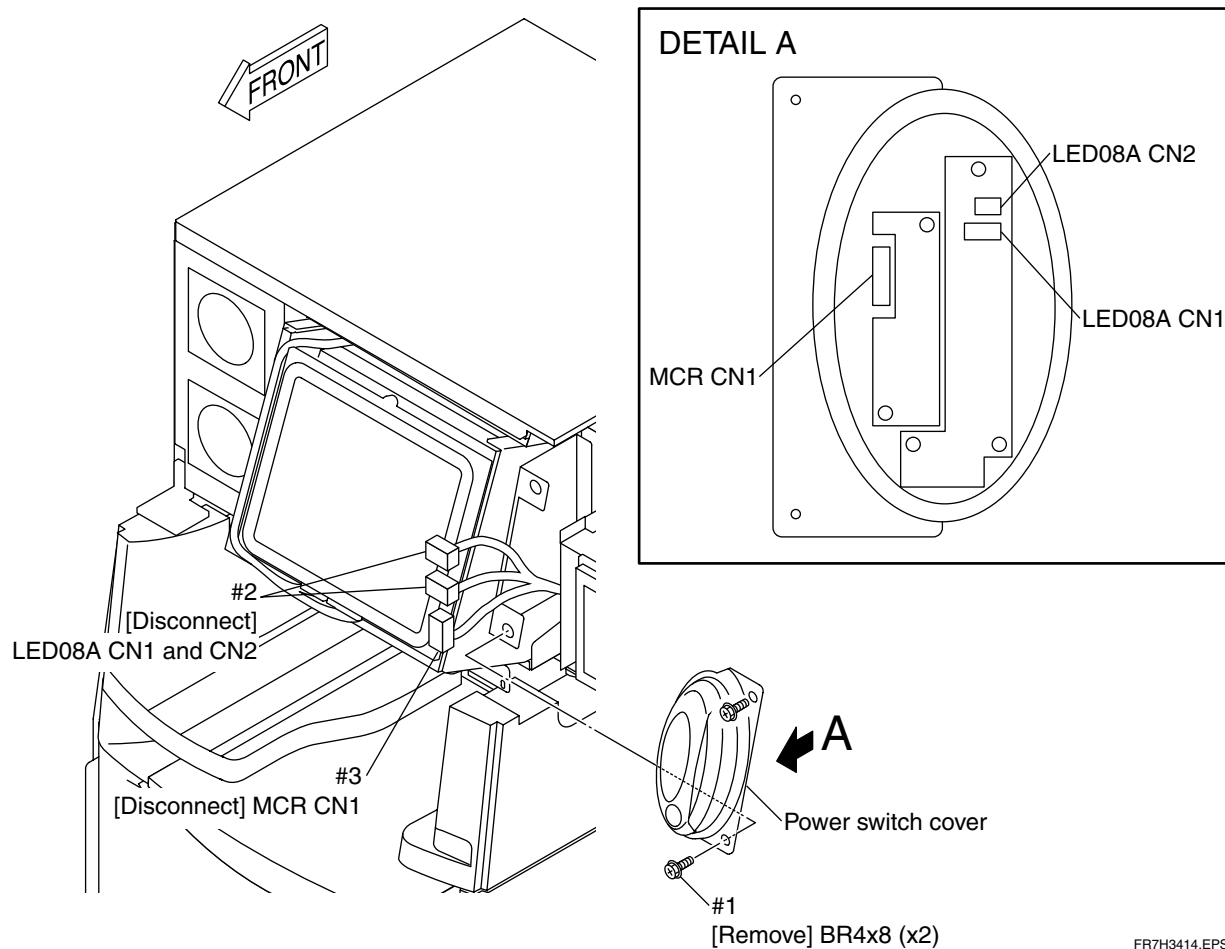


FR7H3413.EPS

## ■ Removal procedure

- (1) Remove the following covers:
  - Upper right-hand side cover
  - Upper left-hand side cover
  - Upper front cover

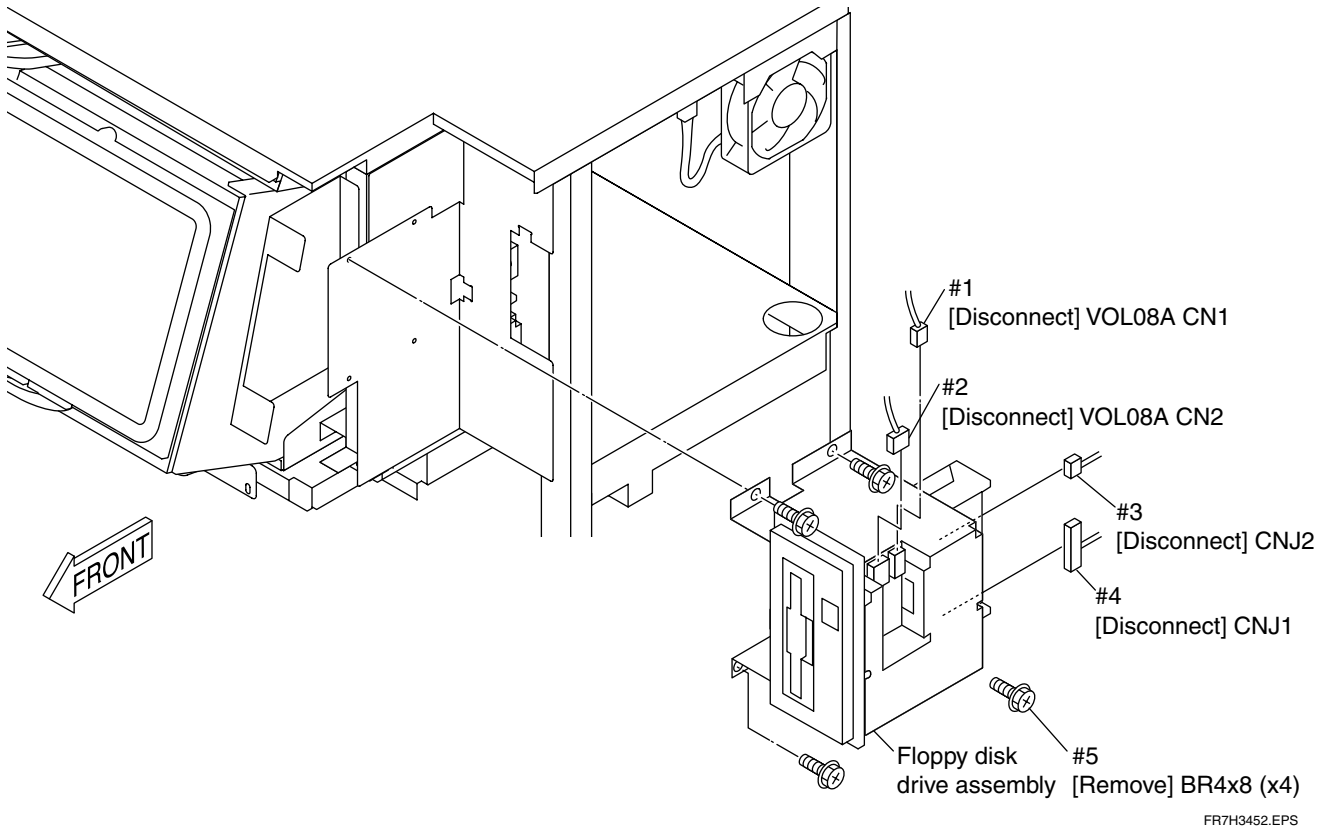
 “3. Removing and Installing the Covers”
- (2) Remove the power switch cover.



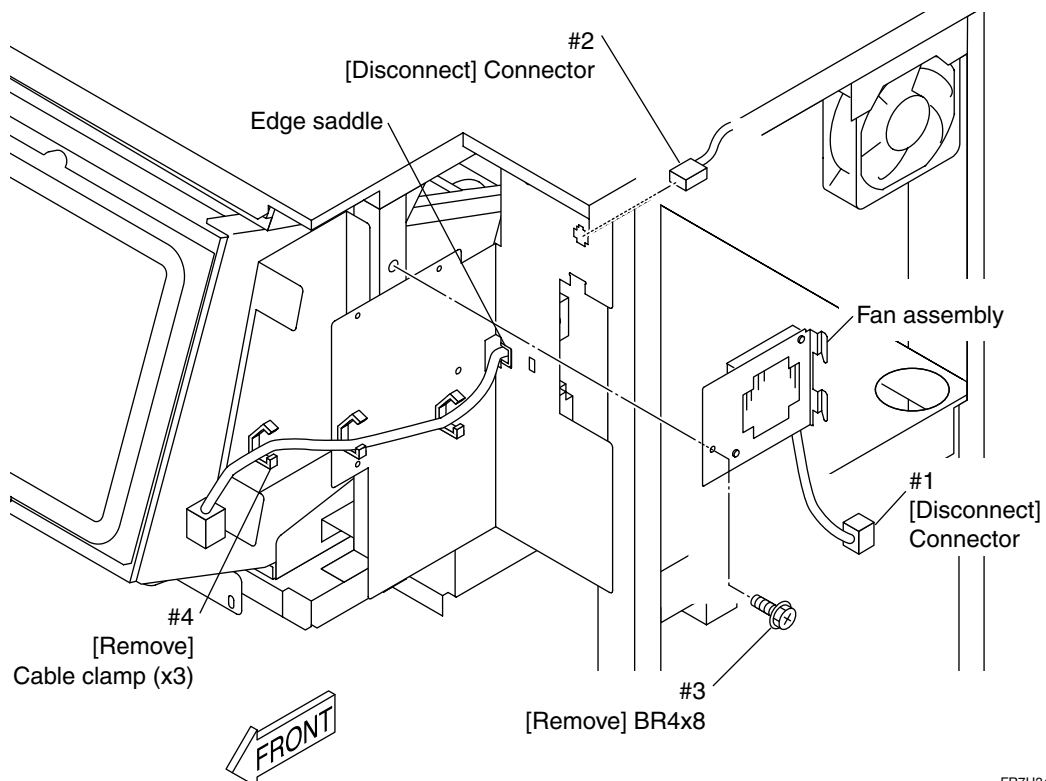
FR7H3414.EPS



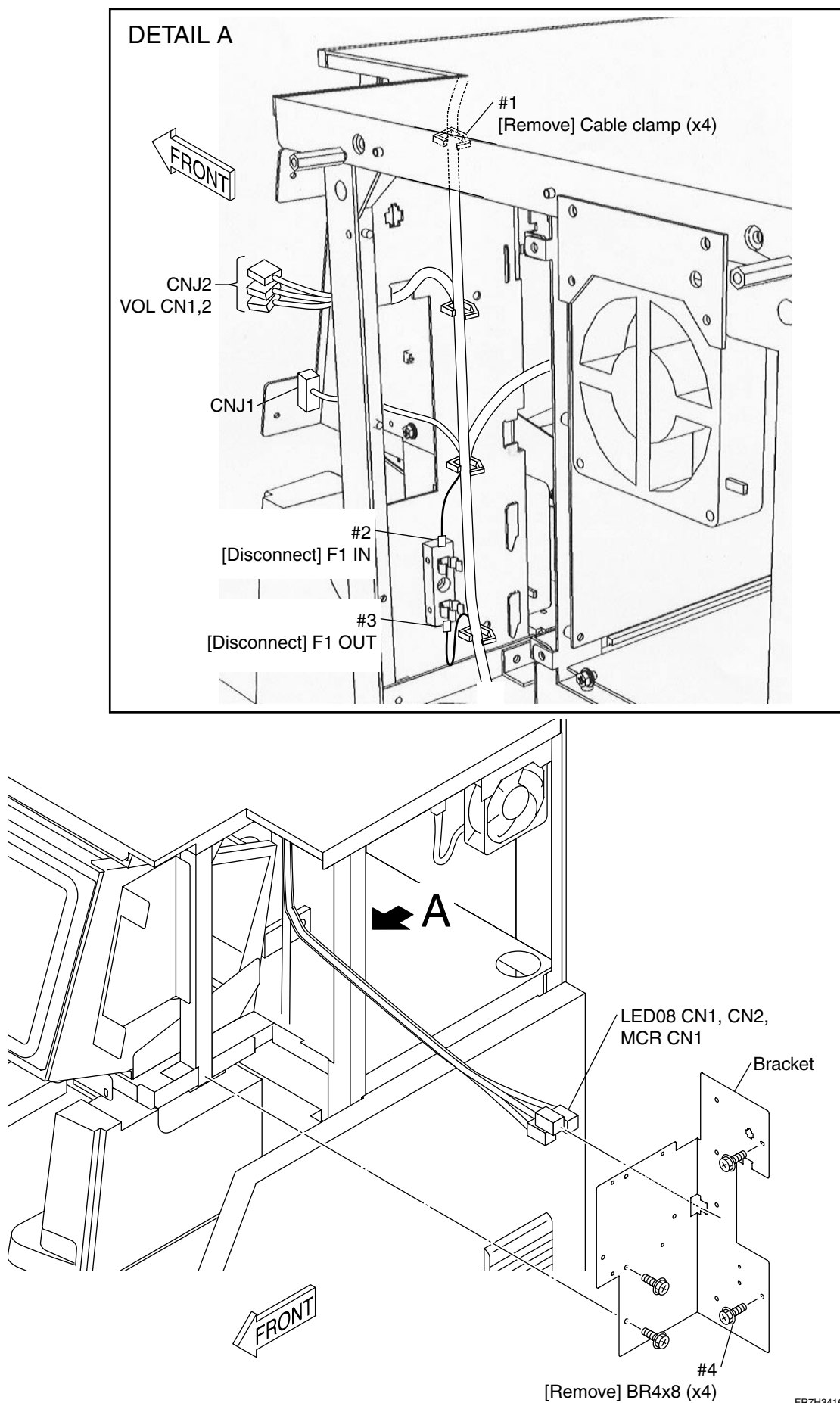
(3) Remove the floppy disk drive assembly.



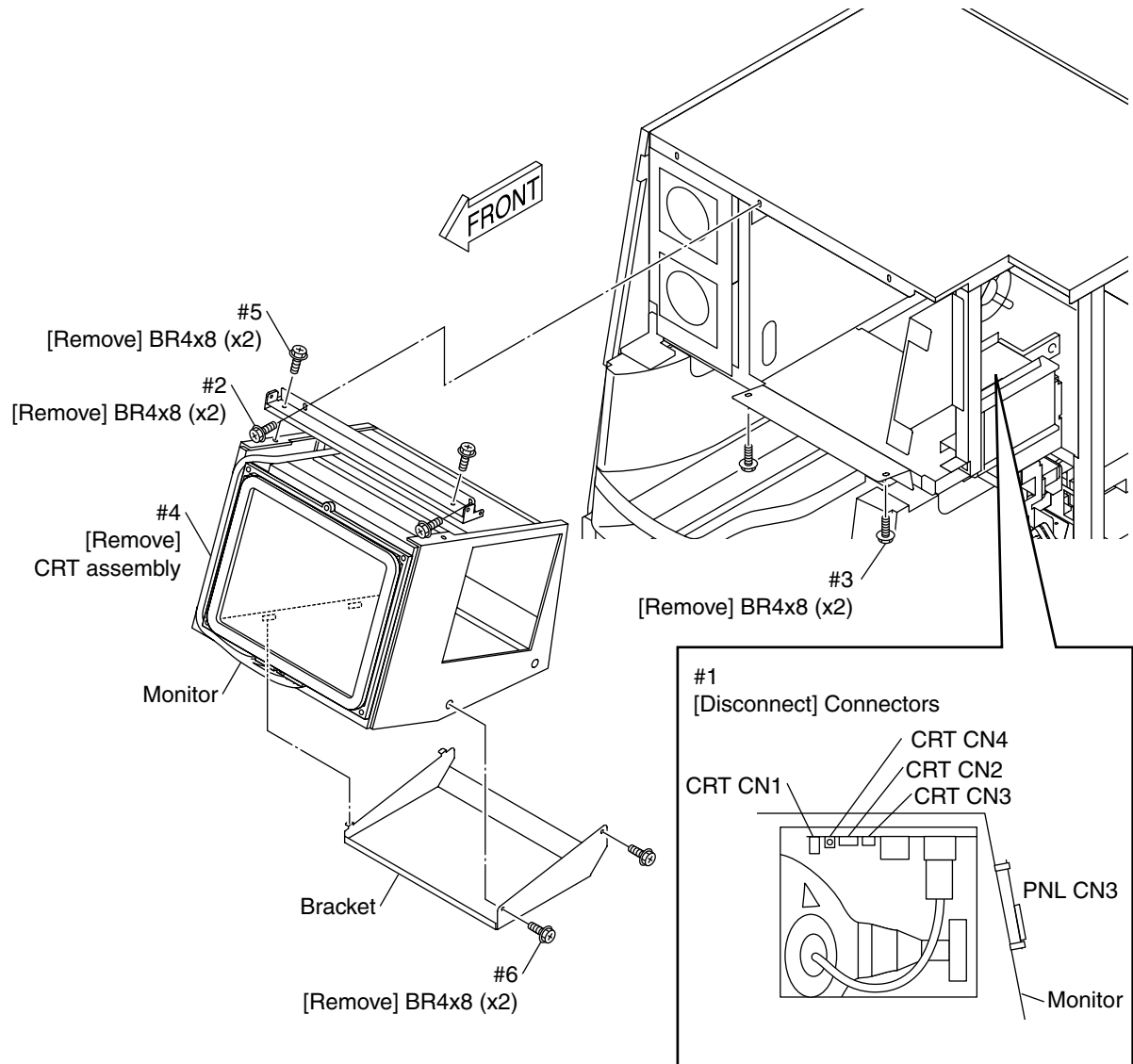
(4) Remove the fan assembly (FANV3).



(5) Remove the bracket.



## (6) Remove the monitor.



FR7H3417.EPS

## ■ Installation procedure

### ◆ **NOTE** ◆

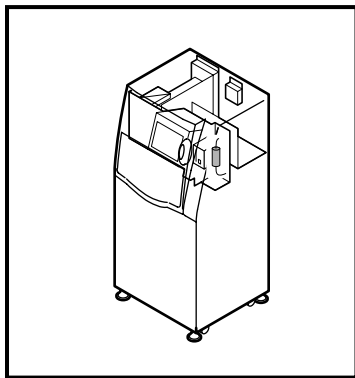
---

*When connecting the FASTON terminals (F1 IN and F1 OUT), insert them all the way into their positions.*

---

To accomplish installation, reverse the removal procedure.

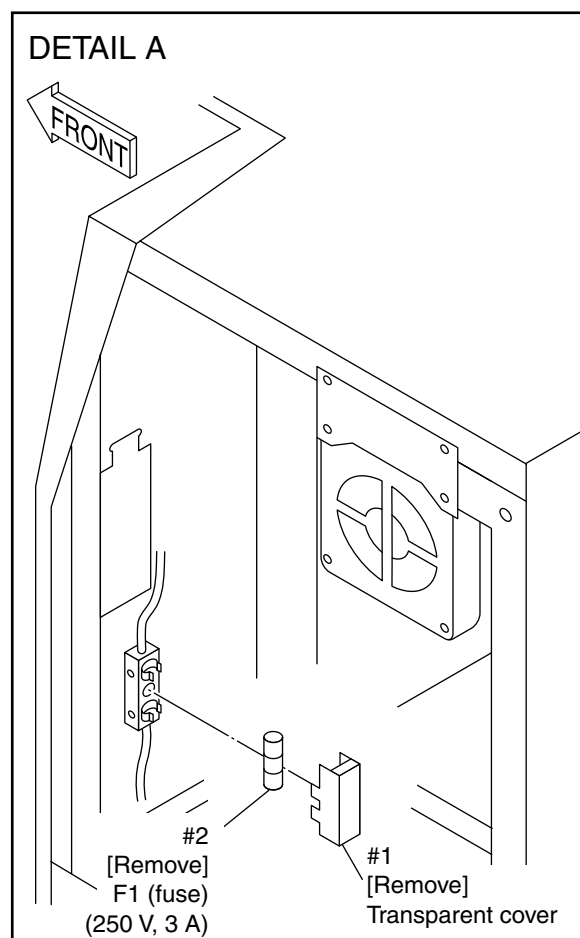
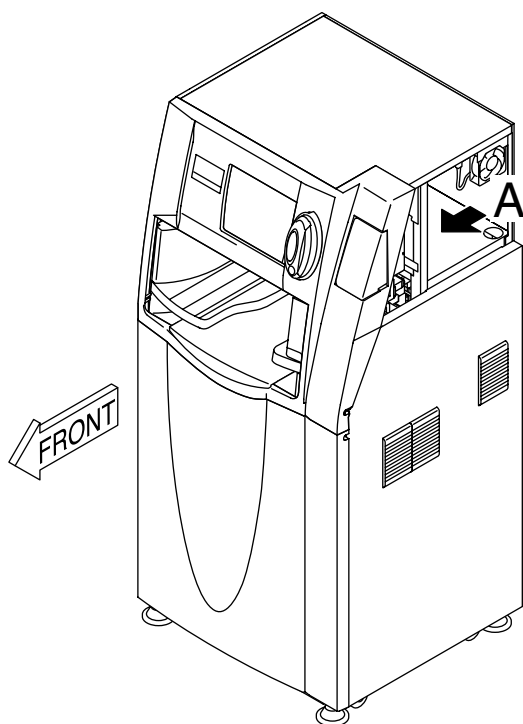
## 14.2 Fuse Between Power Supply Unit and CRT



FR7H3091.EPS

### ■ Removal procedure

- (1) Remove the following covers:
  - Upper right-hand side cover
- ☞ “3. Removing and Installing the Covers”
- (2) Remove the fuse between the power supply unit and CRT.



FR7H3412.EPS

## ■ Installation procedure

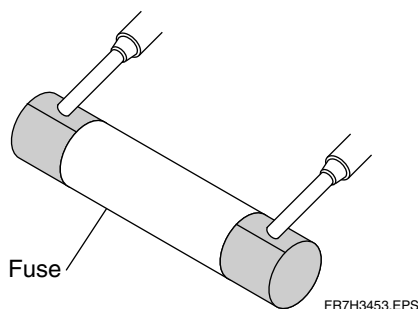
To accomplish installation, reverse the removal procedure.

## ■ Fuse Ratings

Region	Location Name	Rated voltage/ampereage
Between power supply unit and CRT	F1	250 V, 2 A

## ■ Checking the fuses

Measure the resistance value across the fuse. If the measured resistance value is 100  $\Omega$  or greater, it is judged that the fuse has been blown.



### ◇ SUPPLEMENTARY NOTE ◇

*For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.*

## ■ Action to be Taken When the Fuse Has Been Blown

Replace the fuses.

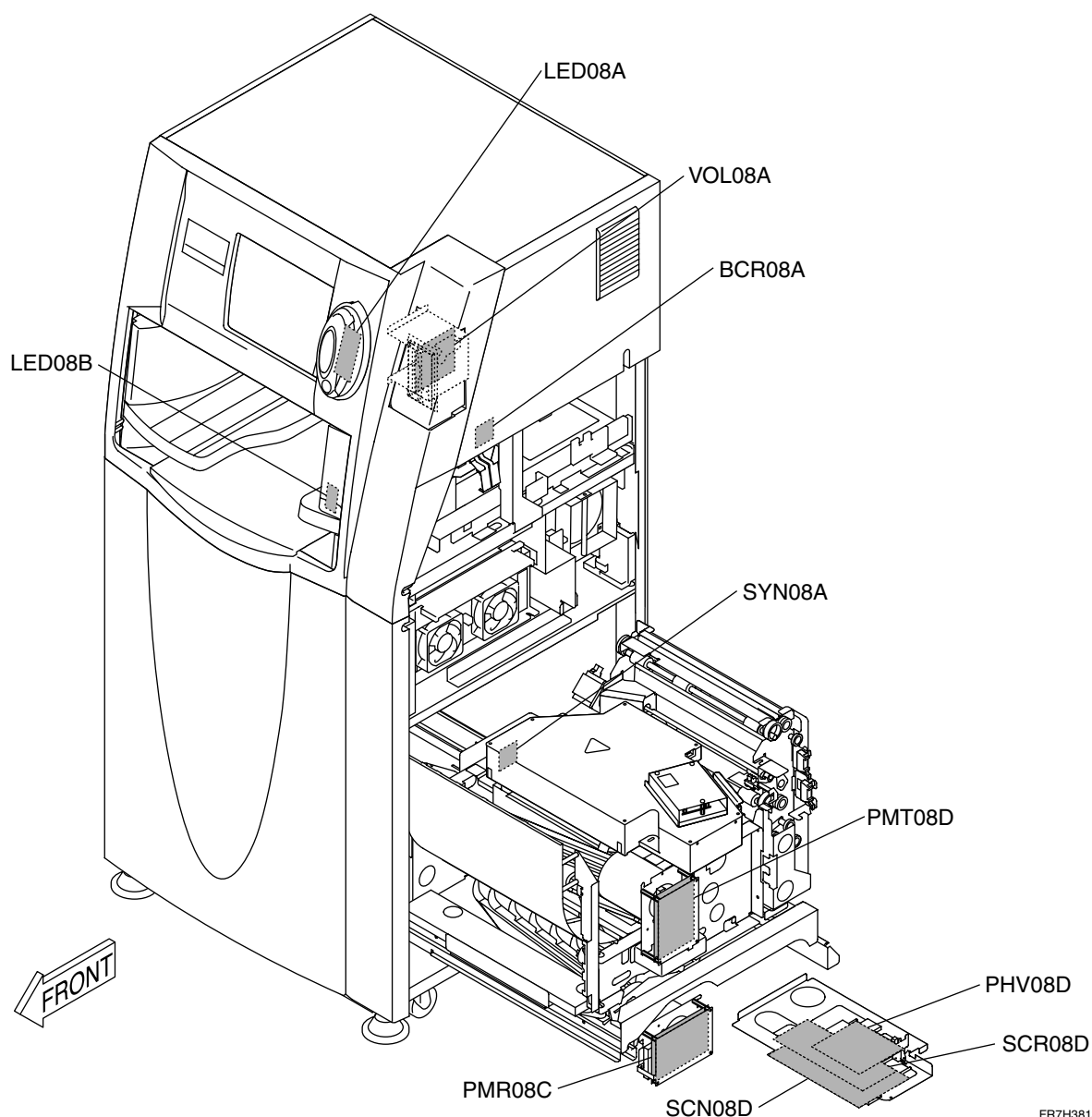
## 15. Removing and Installing the PC Boards



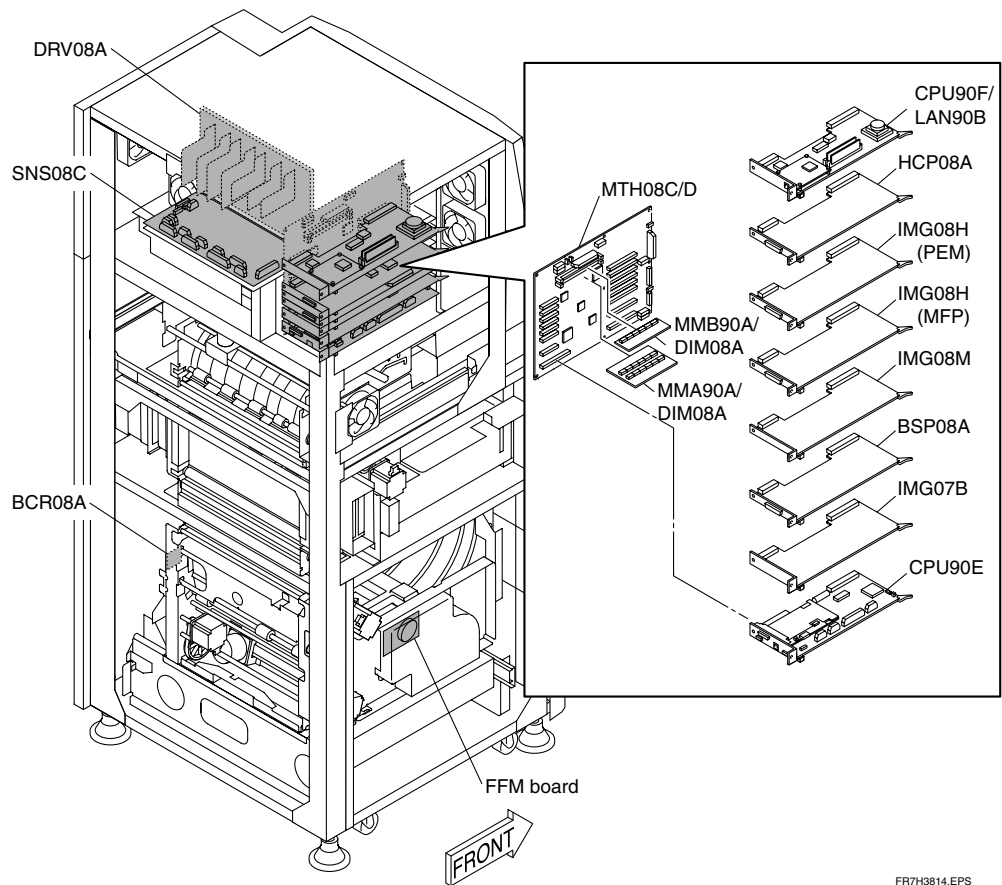
### CAUTION

When servicing a PC board, be sure to wear a wristband to ground your body. If you do not ground your body, the buildup of static electricity on your body may damage electronic components on the PC board.

### ■ PC board arrangement diagram

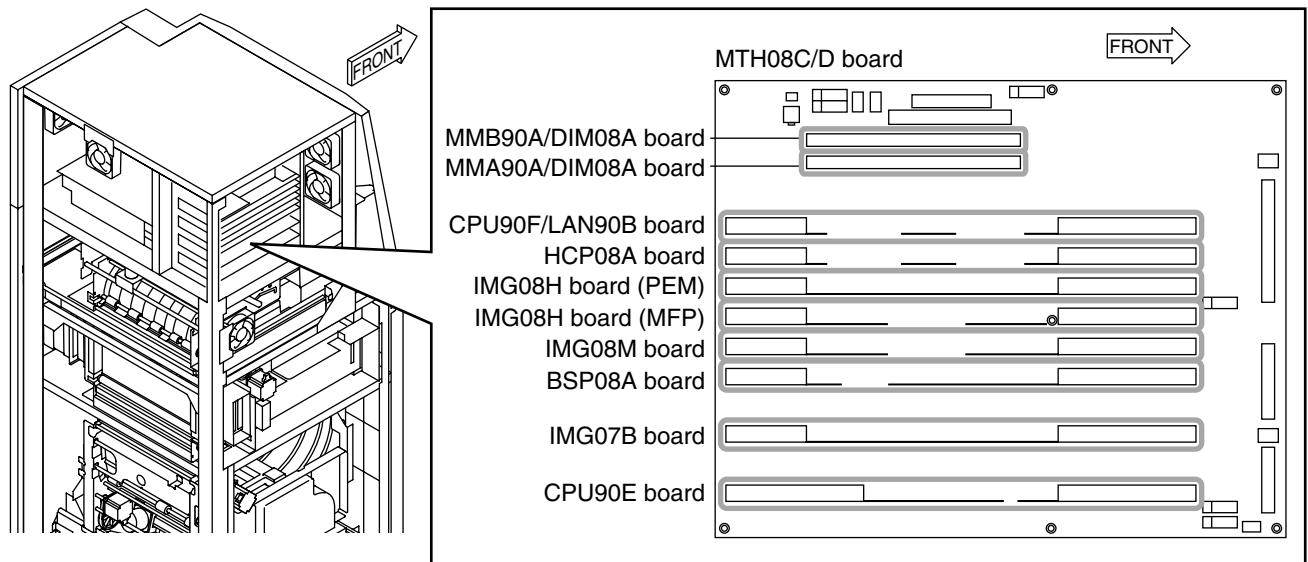


FR7H3813.EPS



FR7H3814.EPS

■ Locations of PC boards in the controller




FR7H3800.EPS

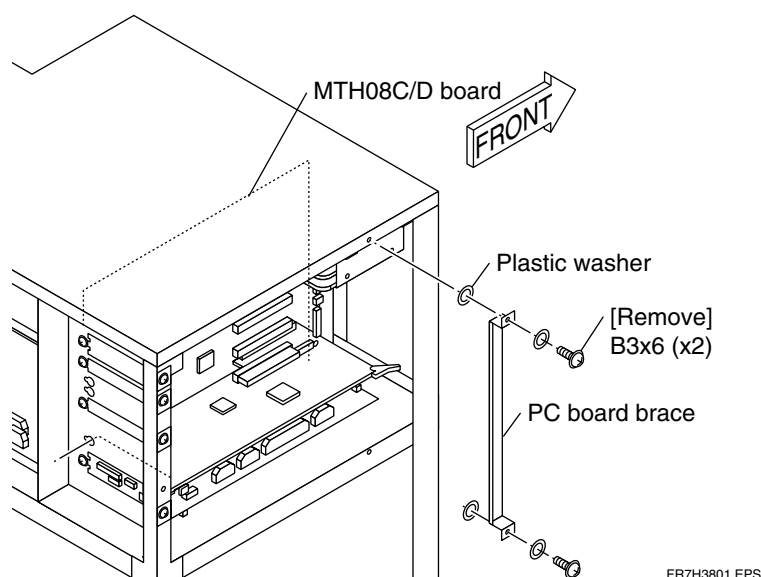


## ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)

### ● Removal procedure

- (1) Remove the following cover:
  - Upper left-hand side cover

 “3. Removing and Installing the Covers”
- (2) Remove the PC board brace.



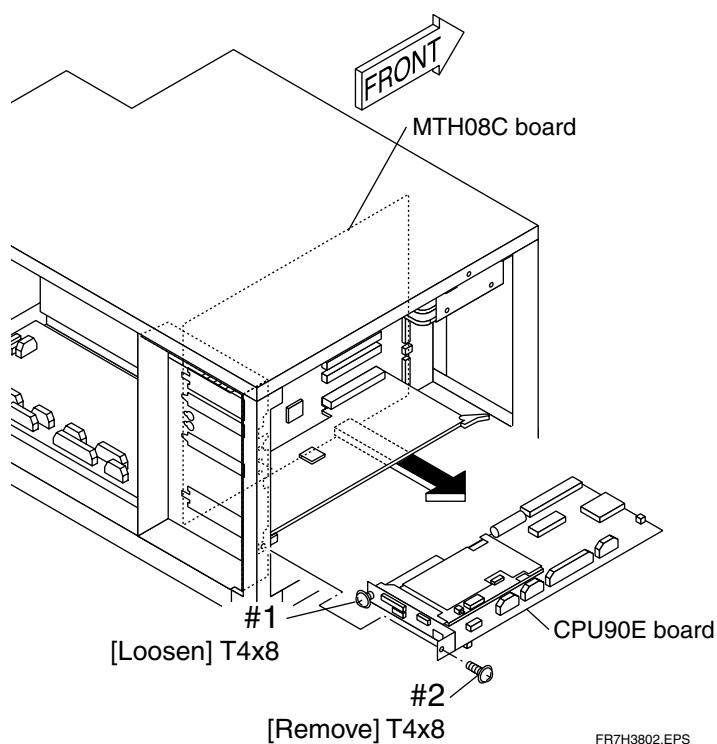
- (3) Disconnect the connectors.

### ◇ REFERENCE ◇

*The connectors need to be disconnected from the following PC boards:*

- CPU90E: CN6 to CN8, CN11, CN18, and CN19
- BSP08A: CN3 and CN4

- (4) Remove the PC board.  
<Example for removing the CPU90E board>



### ● Installation procedure

Accomplish installation by reversing the removal procedure.

## ■ Removing and Installing the Memory board (MMA90A/MMB90A)

### ● Removal procedure

(1) Remove the following cover:

- Upper left-hand side cover

☞ “3. Removing and Installing the Covers”

(2) Remove a memory board.

### ◆ NOTE ◆

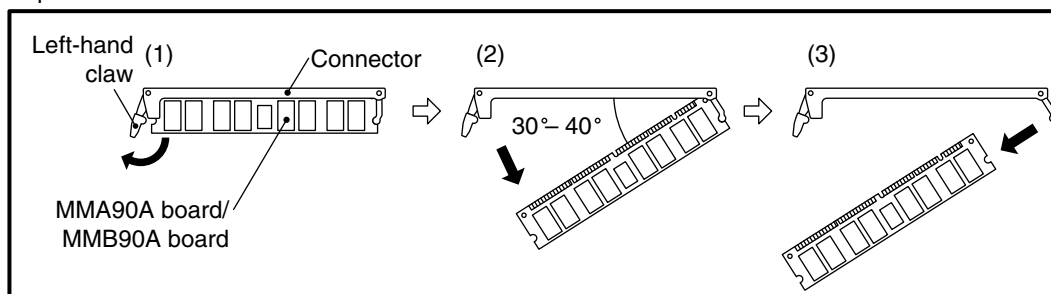
*To remove a memory board, perform the steps indicated below. If you do not follow these steps, the connector claws become damaged.*

(1) Push the connector's left-hand claw open.

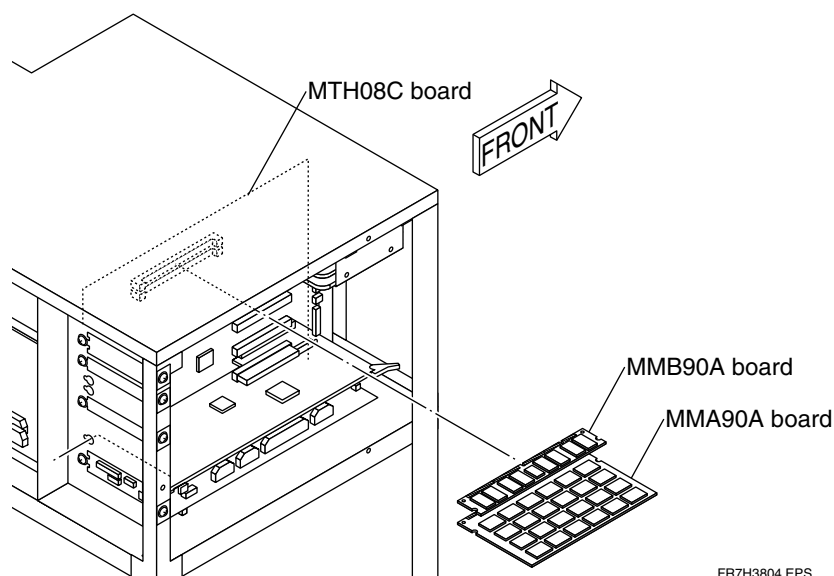
(2) Open the memory board to an angle of about 30° to 40°.

(3) Pull out the memory board.

Top view



FR7H3803.EPS



FR7H3804.EPS

## ● Installation procedure

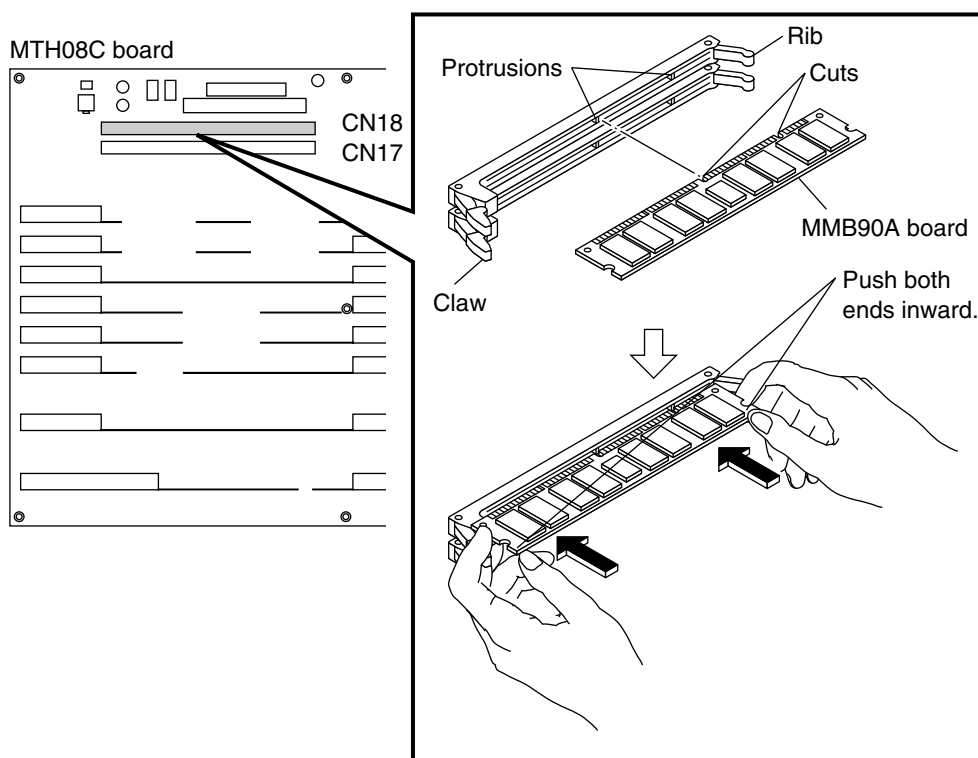
Accomplish installation by reversing the removal procedure.

### ◆ NOTE ◆

*When installing a memory board, observe the following precautions:*

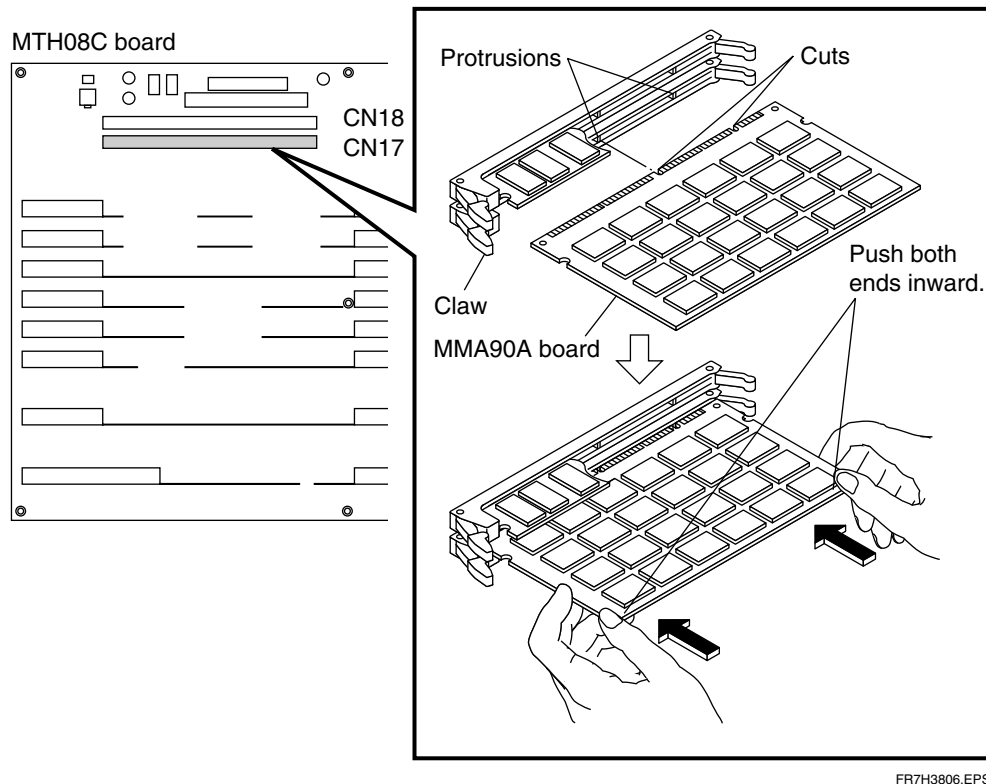
- *Do not touch the connector section of the memory board. Handle the memory board only by its edges.*
- *Open the CN17/CN18 claws, align the cuts in the memory board with the protrusions in the CN17/CN18 socket, hold both ends of the memory board, and insert the memory board horizontally into the socket.*

- (1) Mount the memory board (MMB90A board) in the connector (CN18) on the MTH08C board.



FR7H3805.EPS

- (2) Mount the memory board (MMA90A board) in the connector (CN17) on the MTH08C board.



◆ **CHECK** ◆

*Check that the CN17 and CN18 claws are closed to properly secure the memory boards.*

## ■ Removing and Installing the Memory board (DIM08A)

### ● Removal procedure

(1) Remove the following cover:

- Upper left-hand side cover

☞ “3. Removing and Installing the Covers”

(2) Remove a memory board.

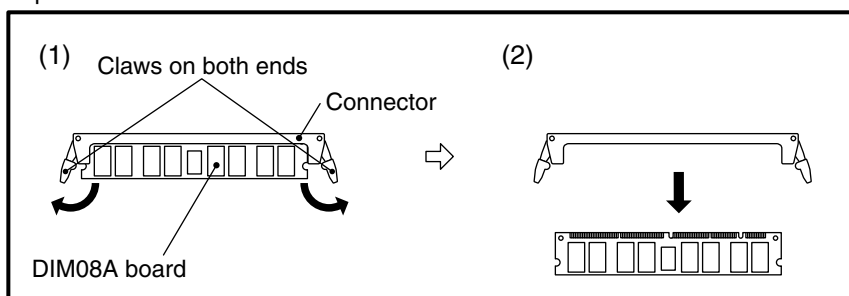
### ◆ NOTE ◆

*To remove a memory board, perform the steps indicated below. If you do not follow these steps, the connector claws become damaged.*

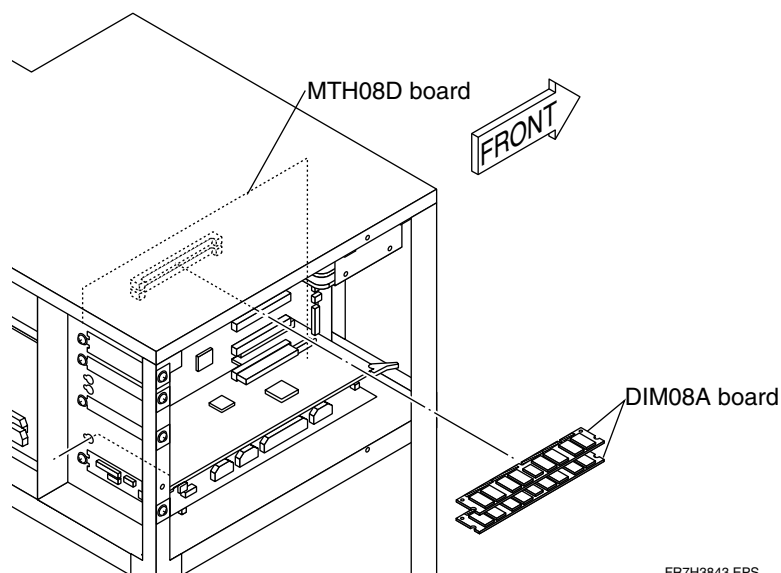
(1) *Simultaneously open the claws on both ends of the connector by pressing them outward.*

(2) *Remove the DIM08A board by pulling it horizontally.*

Top view



FR7H3827.EPS



FR7H3843.EPS

## ● Installation procedure

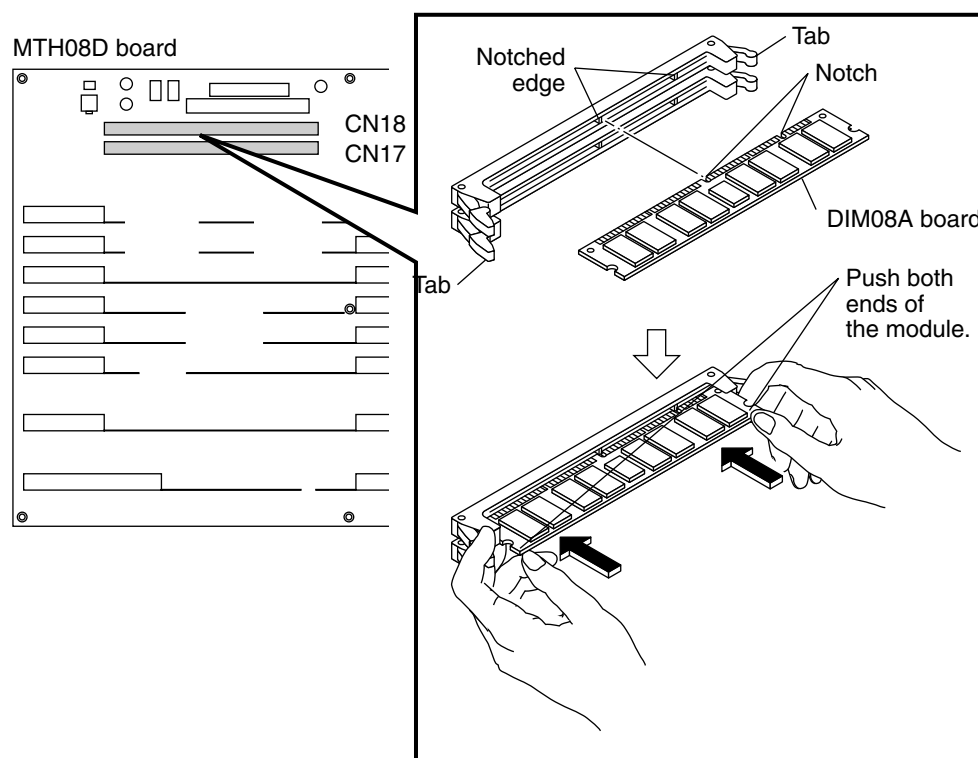
Accomplish installation by reversing the removal procedure.

### ◆ NOTE ◆

*When installing a memory board, observe the following precautions:*

- *Do not touch the connector section of the memory board. Handle the memory board only by its edges.*
- *Open the CN17/CN18 claws, align the cuts in the memory board with the protrusions in the CN17/CN18 socket, hold both ends of the memory board, and insert the memory board horizontally into the socket.*

- (1) Mount the memory board (DIM08A board) in the connector (CN17/CN18) on the MTH08D board.



FR7H3845.EPS

### ◆ CHECK ◆

*Check that the CN17 and CN18 claws are closed to properly secure the memory boards.*

## ■ Removing and installing the MTH08C/D board

### ● Removal procedure

- (1) Remove the following cover:
  - Upper left-hand side cover
  - Upper rear cover

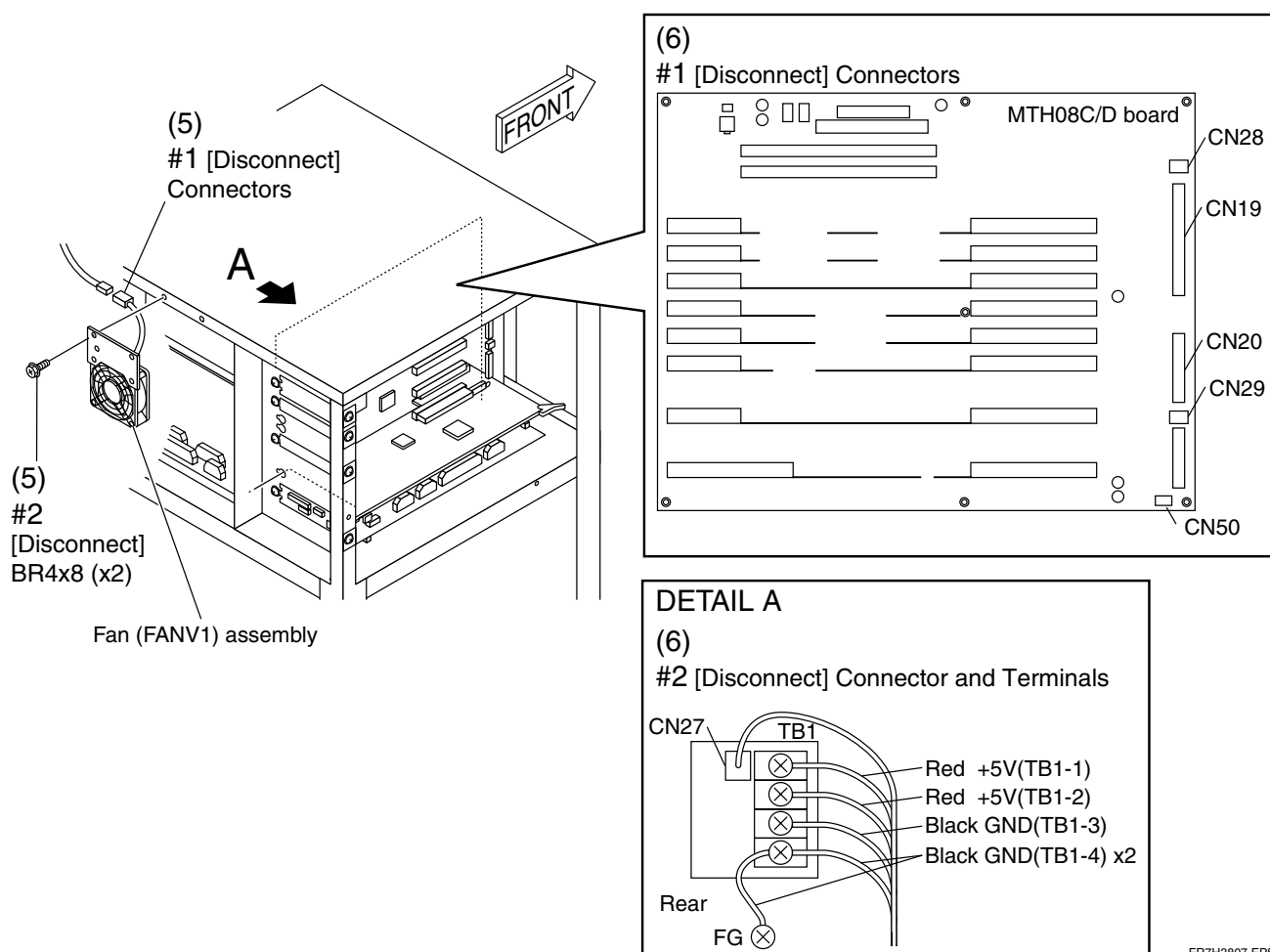
☞ “3. Removing and Installing the Covers”
- (2) Remove all the PC boards other than the MTH08C/D board.
 

☞ “■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”
- (3) Remove a memory board.
 

☞ “■ Removing and Installing the Memory board (MMA90A/MMB90A)”

☞ “■ Removing and Installing the Memory board (DIM08A)”
- (4) Remove the hard disk drive.
 

☞ “11.2 Hard Disk Drive (HDD)”
- (5) Remove the fan (FANV1) assembly.
- (6) Disconnect the connectors and terminals.



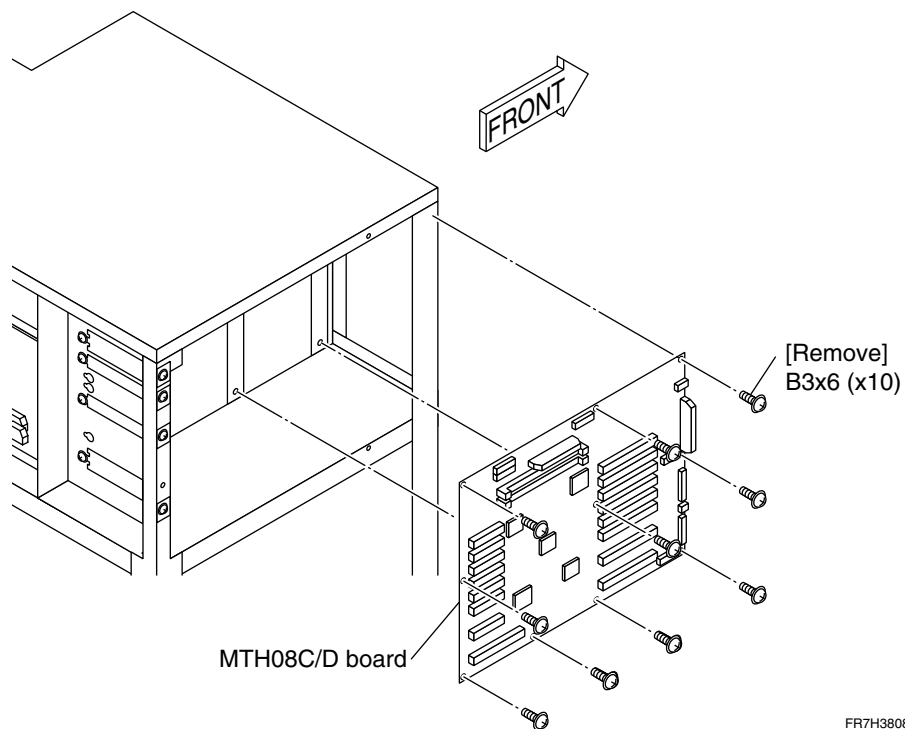
FR7H3807.EPS



(7) Remove the MTH08C/D board.

◆ **NOTE** ◆

*When removing the MTH08C/D board, hold the board by hand to detach it.*



FR7H3808.EPS

● **Installation procedure**

Accomplish installation by reversing the removal procedure.

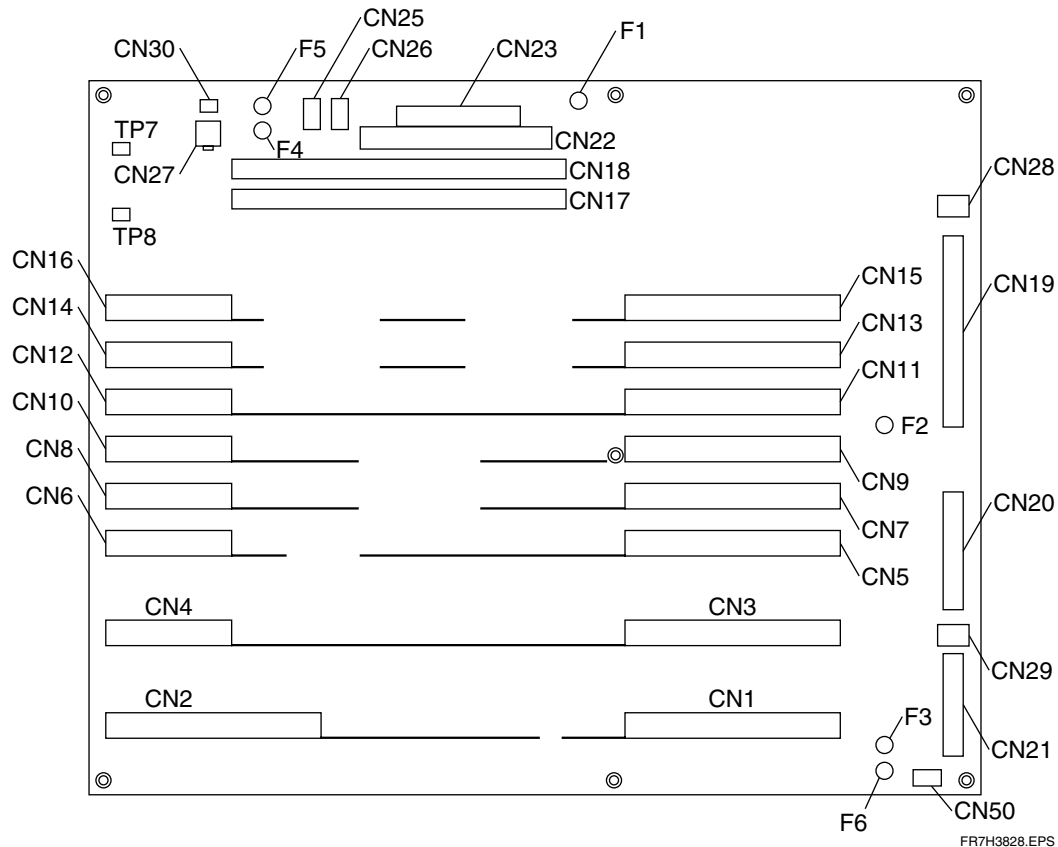
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## 15.1 MTH08C Board

### ■ Removal and installation procedures

- ☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ MTH08C board

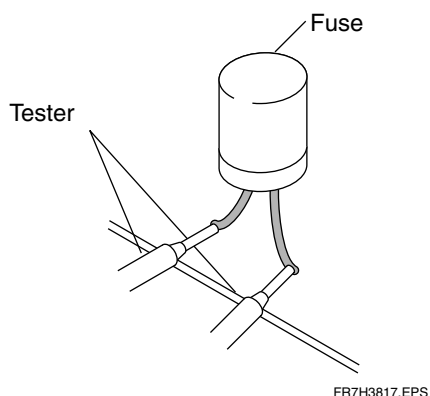


### ■ Fuse Ratings

Location Name	Rated voltage	Rated amperage
F1	250 V	2 A
F2	250 V	2 A
F3	250 V	2 A
F4	250 V	5 A
F5	250 V	2 A
F6	250 V	3 A

## ■ Checking the Fuses

Measure the resistance value across the fuse. If the measured resistance value is  $100\ \Omega$  or greater, it is judged that the fuse has been blown.



### ◇ SUPPLEMENTARY NOTES ◇

- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.
- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is  $1\ \Omega$  or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.

## ■ Action to be Taken When the Fuse Has Been Blown

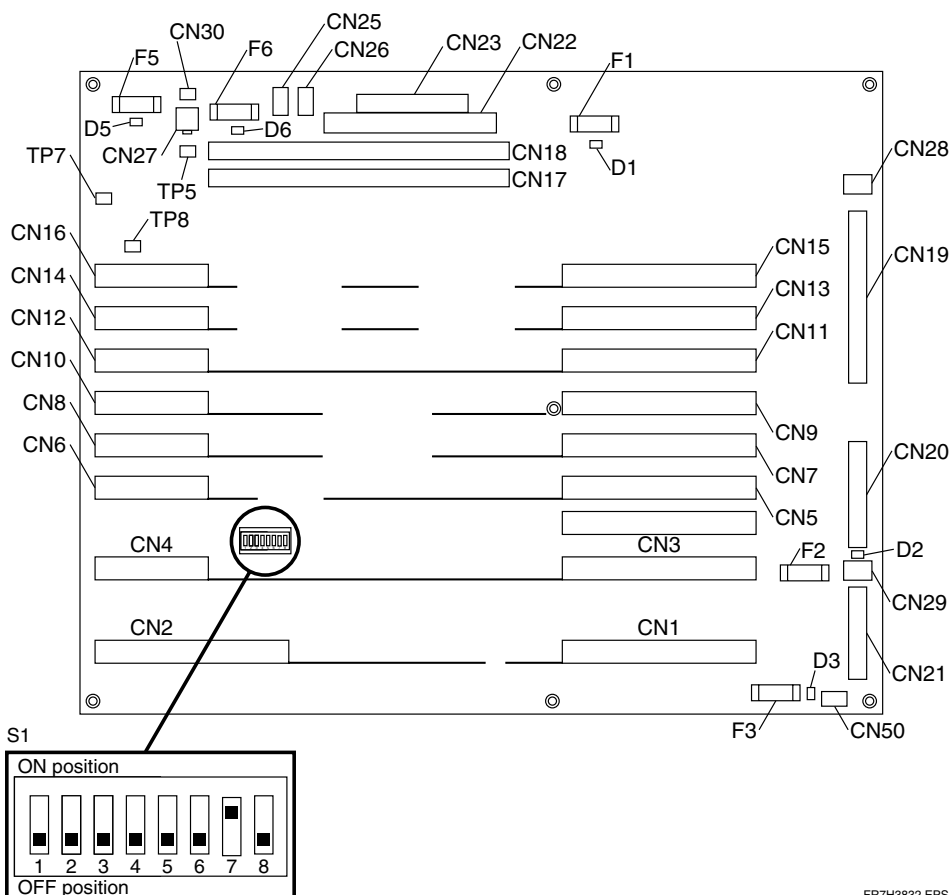
Replace the boards.

## 15.2 MTH08D Board

### ■ Removal and installation procedures

☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ MTH08D board



FR7H3832.EPS

### ■ Switch Setup

#### ● Setting the S1

bit	Description	Setting
1, 2	SDRAM type selection OFF (both bits): 128MB SDRAM	OFF
3	DIMM CL use OFF: Not used	OFF
4	Refresh cycle setting OFF: 4K refresh	OFF
5, 6	DIMM use OFF: Not used	OFF
7	DIMM size selection ON: 64MW	ON
8	Undefined	OFF

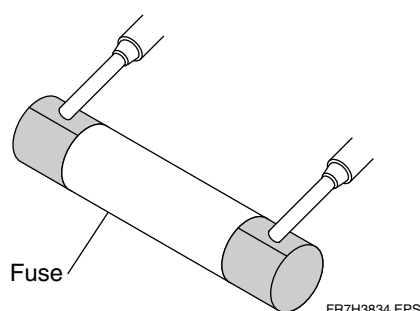
FR7H3833.EPS

## ■ Fuse Ratings

Location Name	Rated voltage	Rated amperage
F1	125 V	2 A
F2	125 V	2 A
F3	125 V	2 A
F5	125 V	4 A
F6	125 V	5 A

## ■ Checking the Fuses

Measure the resistance value across the fuse. If the measured resistance value is 100  $\Omega$  or greater, it is judged that the fuse has been blown.



## ◇ SUPPLEMENTARY NOTES ◇

- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is 1  $\Omega$  or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.
- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.

## ■ Action to be Taken When the Fuse Has Been Blown

Replace the fuses.

## 15.3 CPU90E Board



### CAUTIONS

- After the CPU90E board is replaced, clear the contents of the backup memory and set the date and time.
- When the lithium battery is exhausted, replace the PC board.
- When the PC board is removed for replacement, it must be returned to the Parts Center (factory).
- If the lithium battery is improperly replaced, a battery explosion may occur. When replacing the battery, use a Fujifilm-specified battery or equivalent. The replaced battery must be disposed of in compliance with Fujifilm's instructions.

### ◆ INSTRUCTION ◆

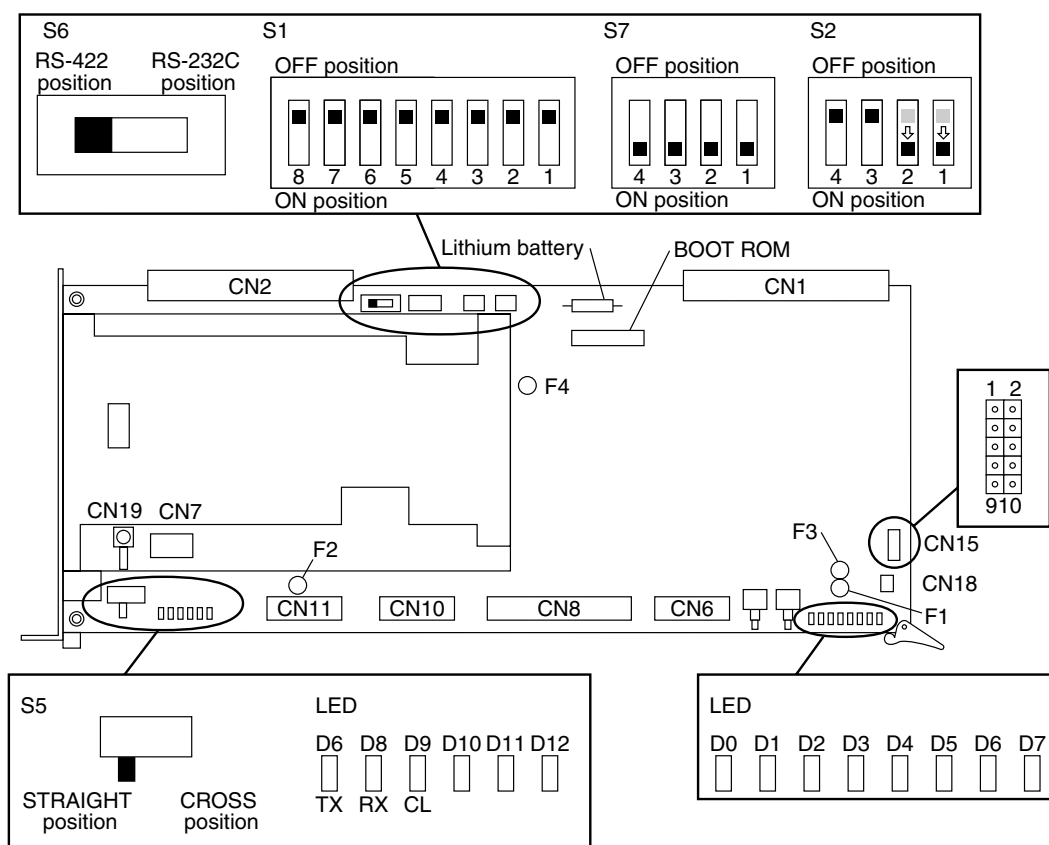
The CR-IR347 uses the IP conveyance count as a guide for recognizing the necessity for IP cleaning. Before replacing the CPU90E board, record the IP conveyance count with the user utility. After CPU90E board replacement, enter the recorded IP conveyance count with "11. SYSTEM UTILITY" of the maintenance utility.

☞ "[11] SYSTEM UTILITY" in the "Maintenance Utility" volume

### ■ Removal and installation procedures

- ☞ "15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)"

## ■ CPU90E board



FR7H3835.EPS

## ■ Switch Setup

Switch	Function	Factory setup	Setup at installation
S1	General-purpose setup switch. The software reads the setting of this switch.	All bits OFF	Installation style dependent
S2	1) S2-1 and S2-2 (to be set up in the same manner) Performs battery backup function ON/OFF setup.	OFF	ON
	2) S2-3 Turns ON or OFF the MTH08C NMI signal issuance function. The OFF position must be selected because the MTH08C does not currently have the NMI signal issuance function.	OFF	OFF
	3) S2-4 Turns ON or OFF the boot ROM write function. This function is not going to be used for the time being because it is operative only when the flash EEPROM is used as the boot ROM.	OFF	OFF
S3	Issues a manual reset.	—	—
S4	Issues a manual NMI.	—	—
S5	Effects ID-Network line connection style (CROSS/STRAIGHT) changeover.	STRAIGHT position	Installation style dependent
S6	Effects IDT communication line signal level (RS-422/RS-232C) changeover.	RS-422 position	Installation style dependent
S7	Turns ON or OFF the power remote control function for the IDT. 1) S7-1 and S7-2 (to be simultaneously set up) Turns ON or OFF the IR-to-IDT power remote control function.	ON	ON
	2) S7-3 and S7-4 (to be simultaneously set up) Turns ON or OFF the IDT-to-IR power remote control function.	ON	ON

TR7H3800.EPS

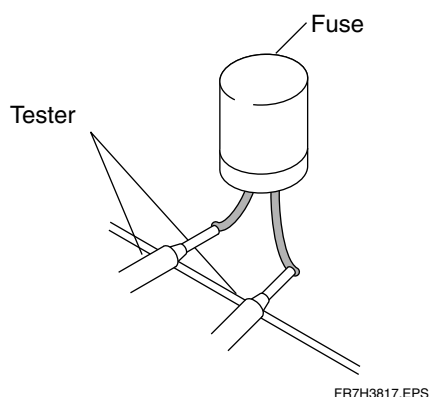


## ■ Fuse Ratings

Location Name	Rated voltage	Rated amperage
F1	250 V	1 A
F2	250 V	1 A
F3	250 V	1 A
F4	250 V	2 A

## ■ Checking the fuses

Measure the resistance value across the fuse. If the measured resistance value is 100  $\Omega$  or greater, it is judged that the fuse has been blown.



## ◇ SUPPLEMENTARY NOTES ◇

- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.
- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is 1  $\Omega$  or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.

## ■ Action to be Taken When the Fuse Has Been Blown

Replace the boards.

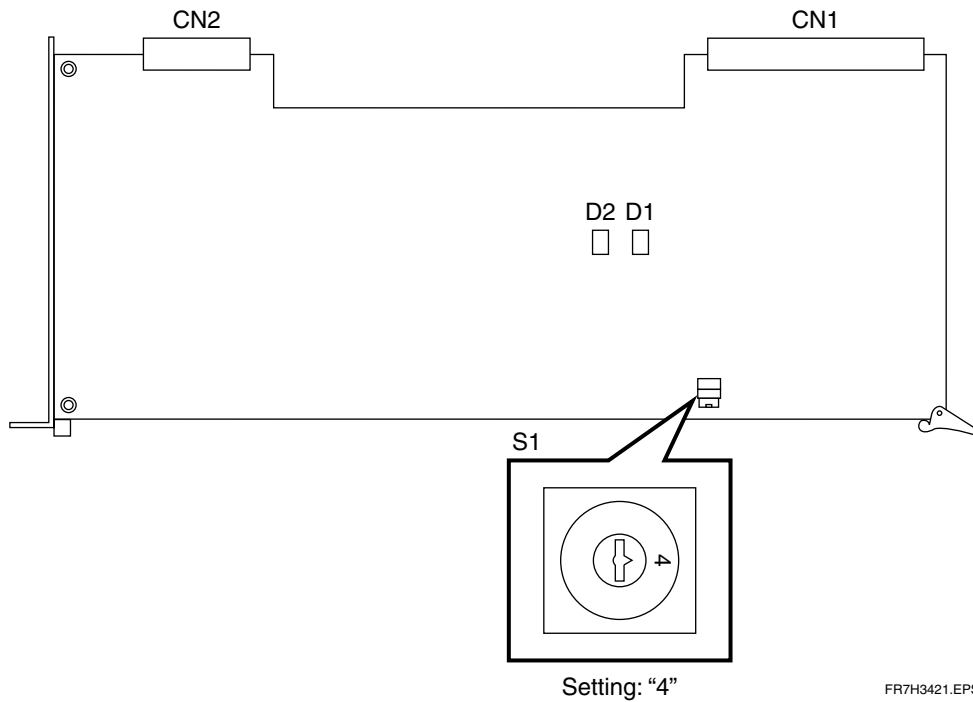
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## 15.4 IMG07B Board

### ■ Removal and installation procedures

- ☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ IMG07B board



### ■ Switch Setup

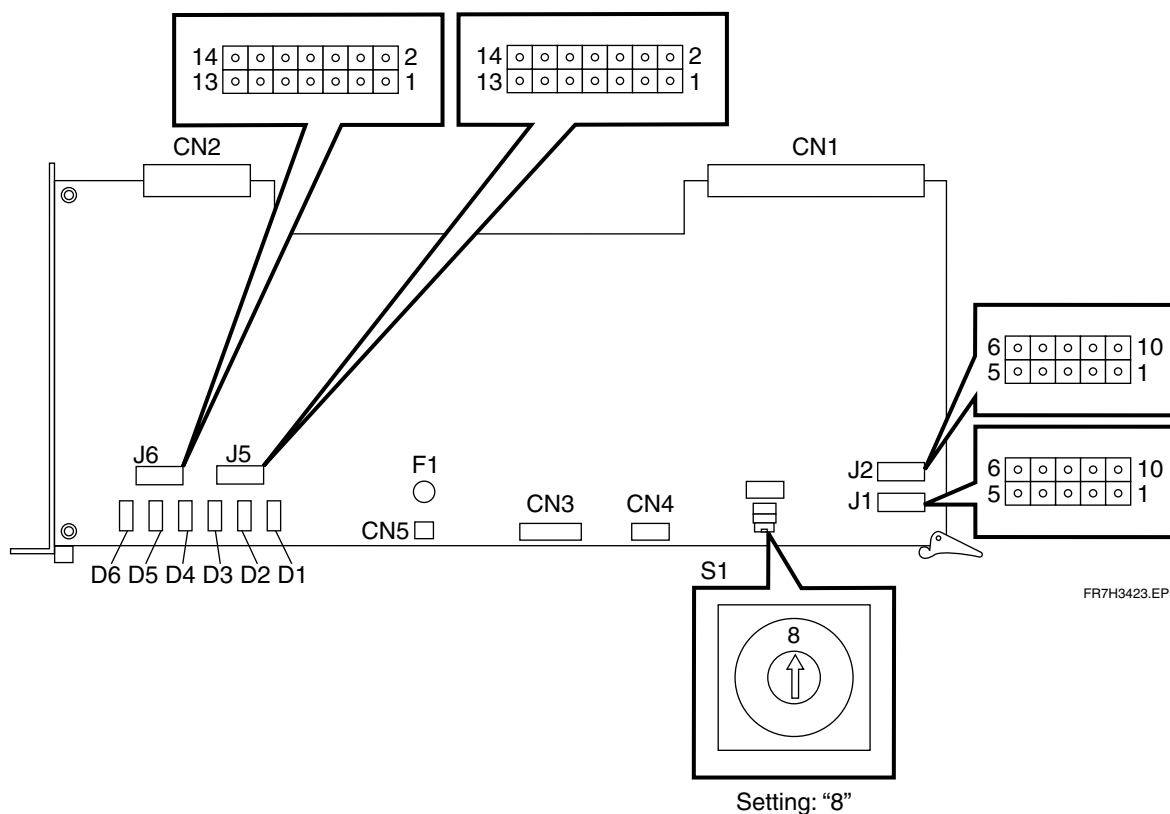
Make sure that the switch (S1) on the IMG07B board is set to “4”.

## 15.5 BSP08A Board

### ■ Removal/installation procedure

☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ BSP08A board

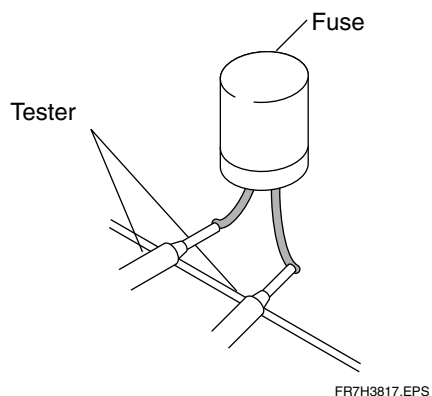


### ■ Switch Setup

Make sure that the switch (S1) on the BSP08A board is set to “8”.

## ■ Checking the fuses

Measure the resistance value across the fuse. If the measured resistance value is 100  $\Omega$  or greater, it is judged that the fuse has been blown.



### ◇ SUPPLEMENTARY NOTES ◇

- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.
- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is 1  $\Omega$  or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.

## ■ Action to be Taken When the Fuse Has Been Blown

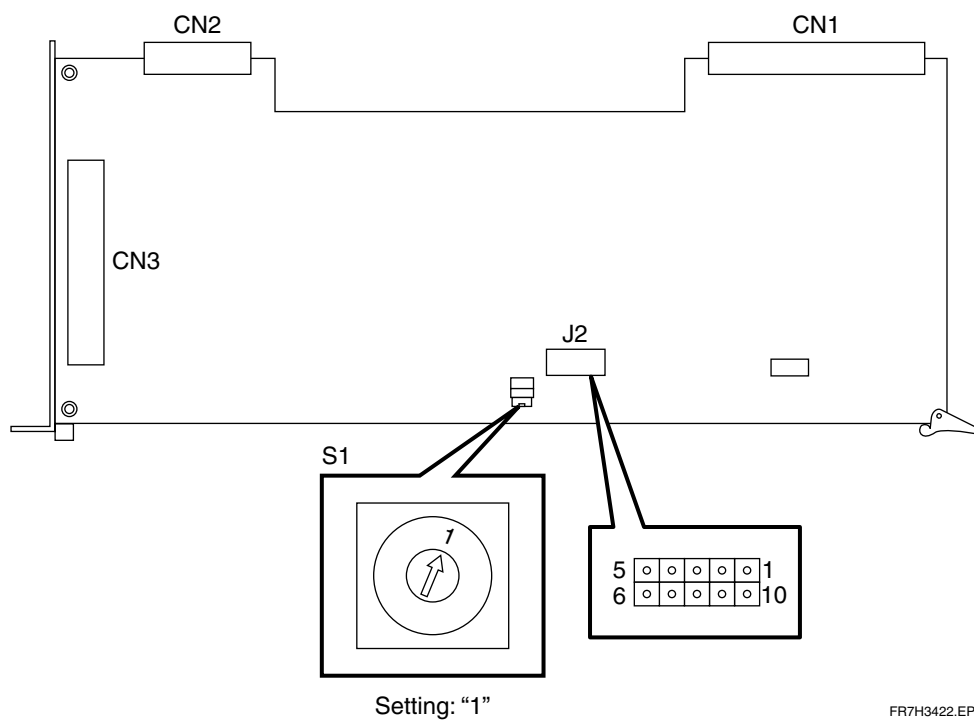
Replace the boards.

## 15.6 IMG08M Board

### ■ Removal and installation procedures

- ☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ IMG08M board



### ■ Switch Setup

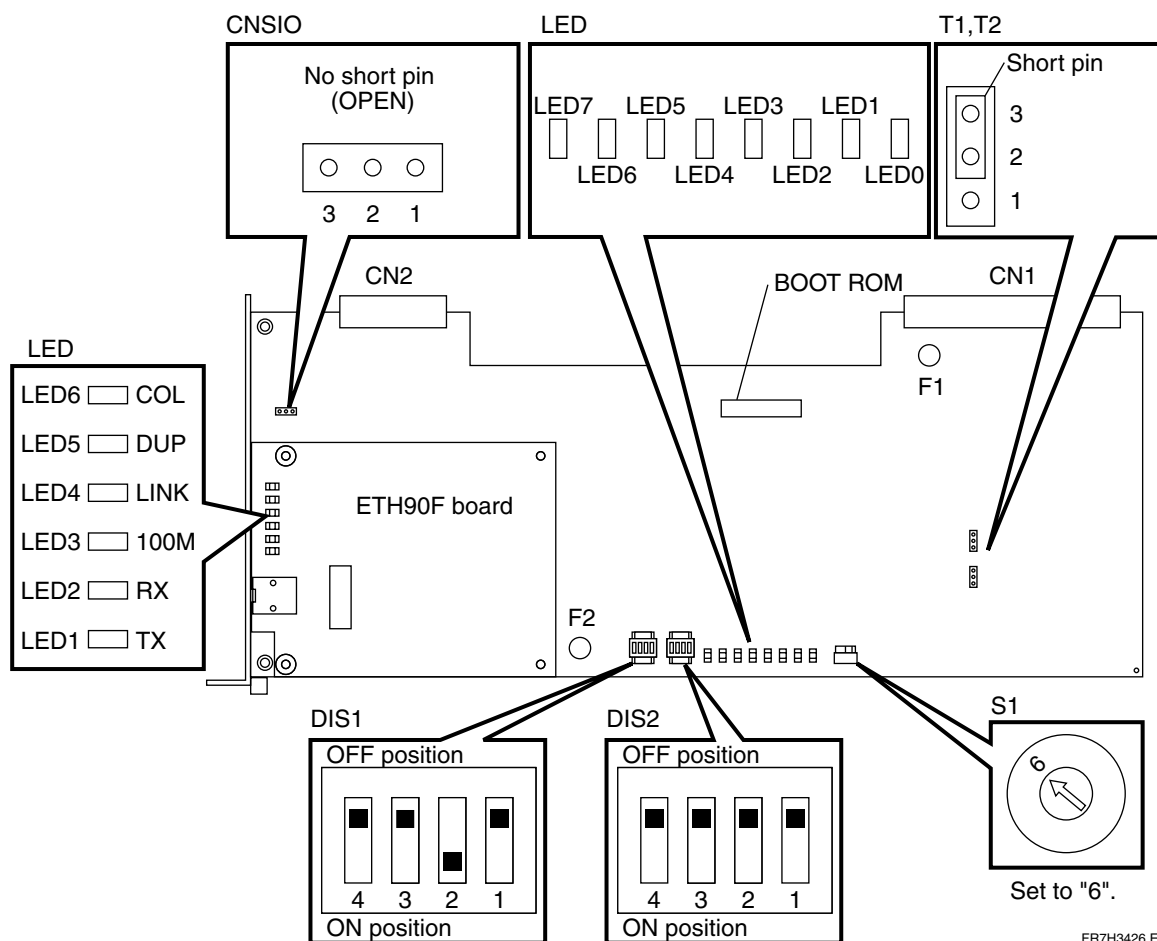
Make sure that the switch (S1) on the IMG08M board is set to "1".

## 15.7 CPU90F Board (Optional)

### ■ Removal and installation procedures

☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ CPU90F board



### ■ Switch Setup

Make sure that the CPU90F board is set as follows.

CNSIO: No short pin (open)

T1, T2: Nos. 2 and 3 are shorted.

DIS1: Nos. 1, 3, and 4 are OFF; only No. 2 is ON.

DIS2: All OFF

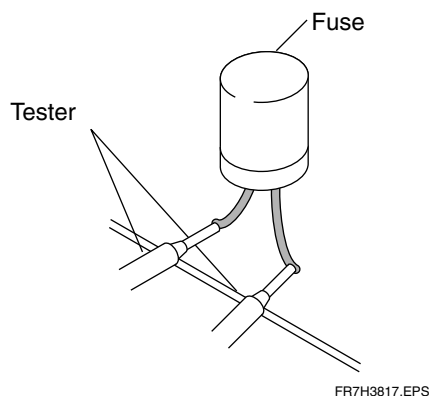
S1: "6"

### ■ Fuse Ratings

Location Name	Rated voltage	Rated amperage
F1	250 V	1 A
F2	250 V	3 A

## ■ Checking the Fuses

Measure the resistance value across the fuse. If the measured resistance value is  $100\ \Omega$  or greater, it is judged that the fuse has been blown.



### ◇ SUPPLEMENTARY NOTES ◇

- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.
- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is  $1\ \Omega$  or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.

## ■ Action to be Taken When the Fuse Has Been Blown

Replace the boards.

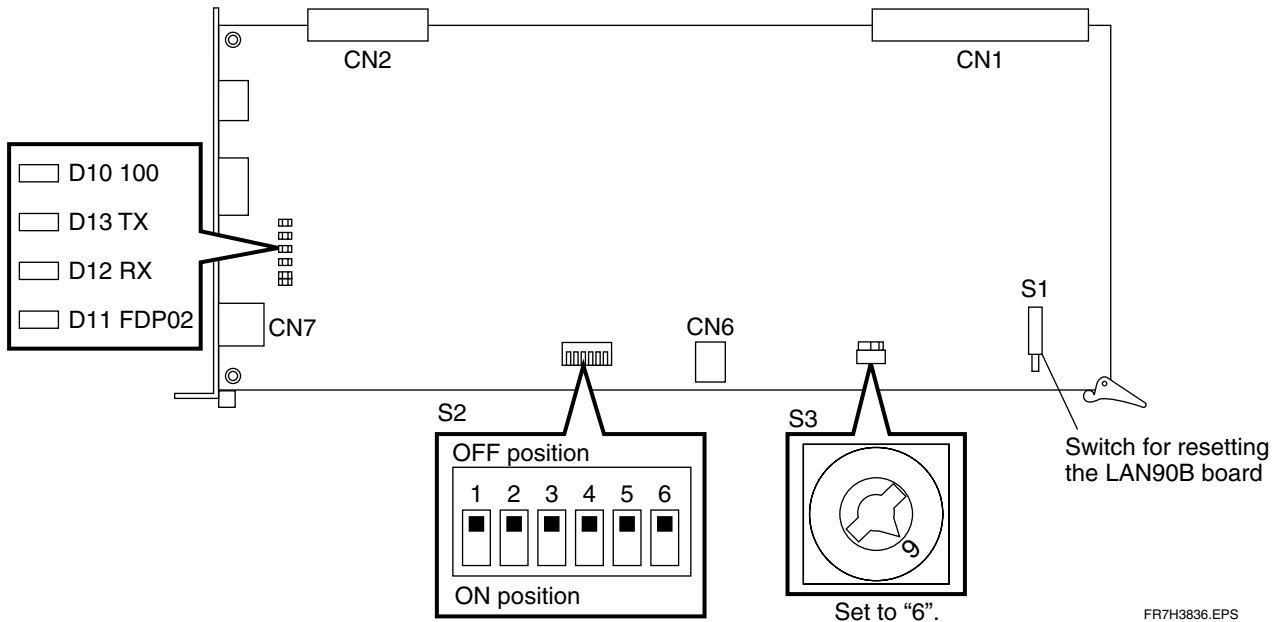


## 15.8 LAN90B Board (Optional)

### ■ Removal and installation procedures

- ☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ LAN90B board



### ■ Switch Setup

Make sure that the LAN90B board has been set as shown below.

#### ● Setting the S2

bit	Description	Setting
1-3, 5, 6	To be determined	Always OFF
4	ON: Function test (FT) OFF: OS boot (NORMAL)	Always OFF

FR7H3837.EPS

#### ● Setting the S3

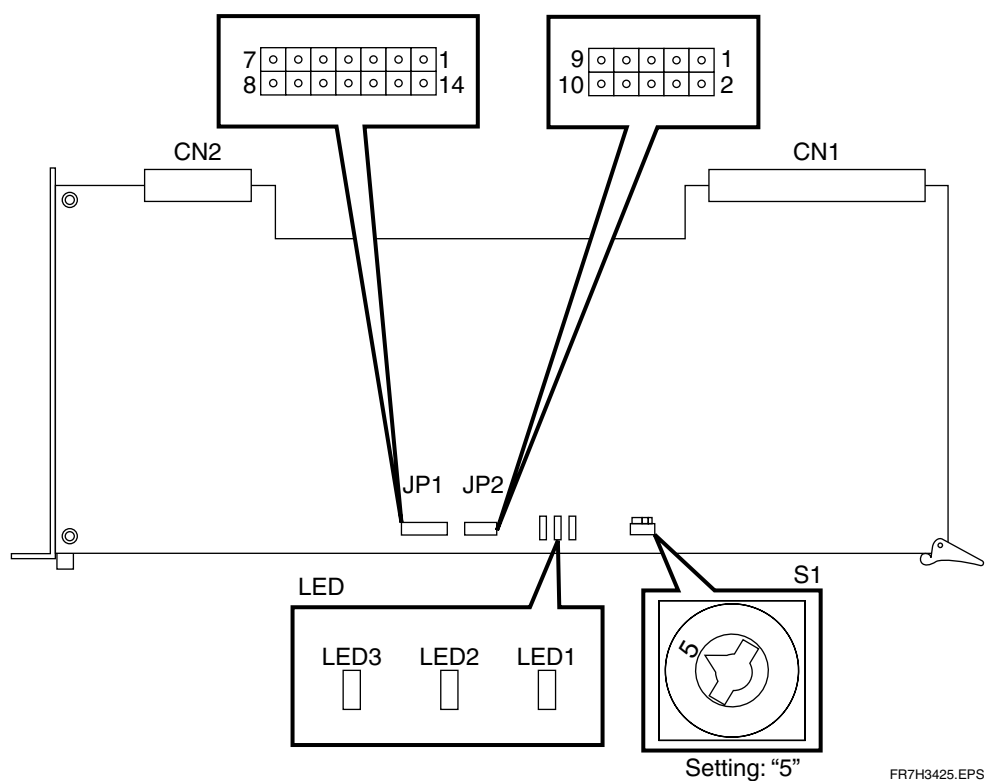
Set to "6".

## 15.9 HCP08A Board (Optional)

### ■ Removal and installation procedures

- ☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

### ■ HCP08A board



### ■ Switch Setup

Make sure that the switch (S1) on the HCP08A board is set to “5”.

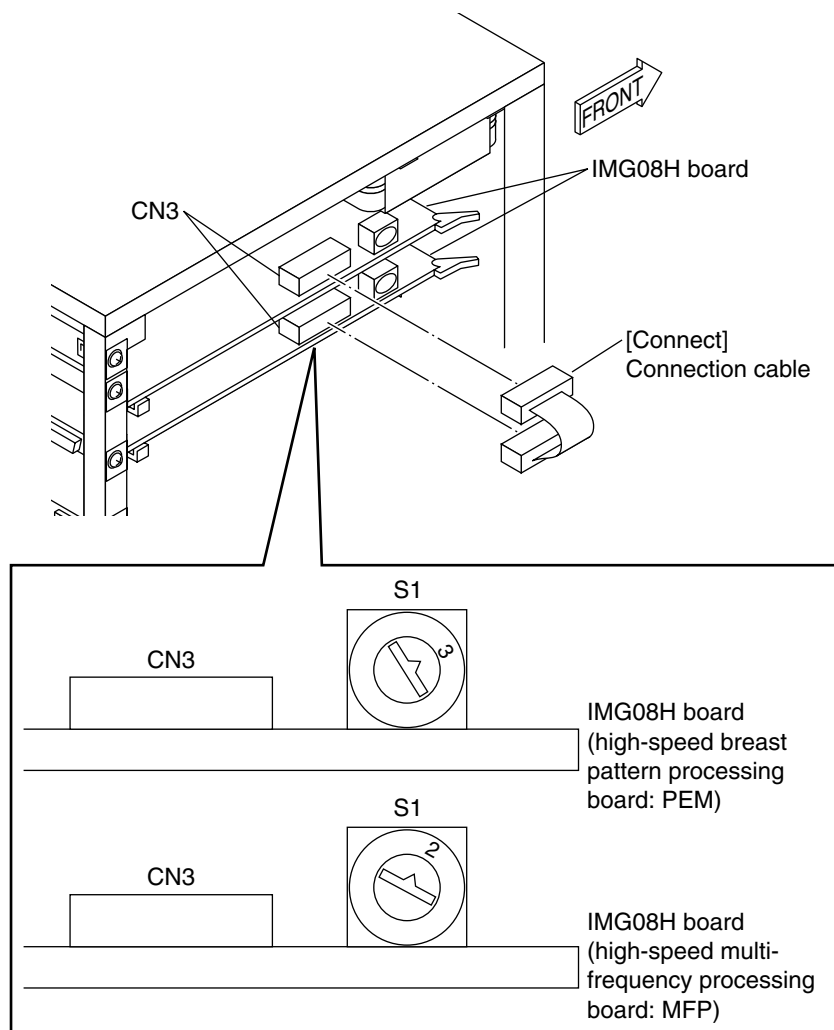
## 15.10 IMG08H Board (Optional)

### ■ Removal and installation procedures

- ☞ “15 Removing and Installing PC Boards, ■ Common procedures for removal and installation of PC boards in the controller (except for the MTH08C/D)”

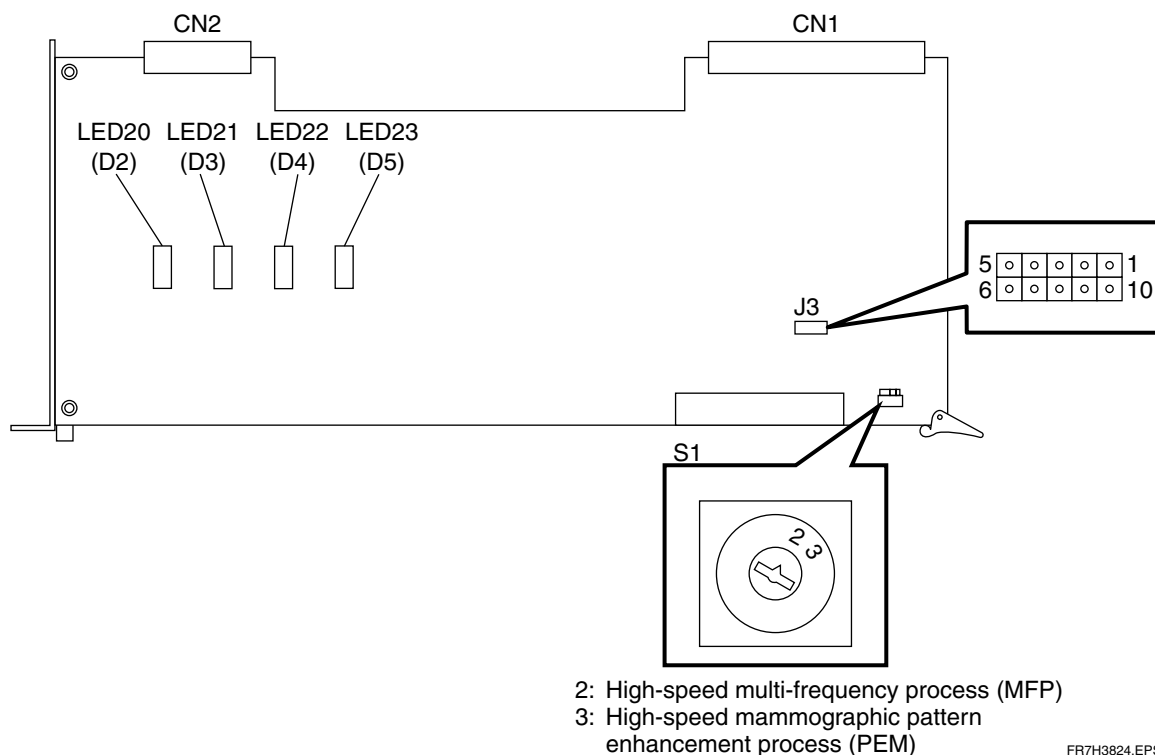
#### ◆ NOTE ◆

*Connect the high-speed multi-frequency processing board (MFP) and high-speed breast pattern processing board (PEM) with a cable. If they are not connected together, no 20pix/mm image will be outputted.*



FR7H3826.EPS

## ■ IMG08H board



## ■ Switch Setup


Make sure that S1 on the IMG08H board is positioned as follows.

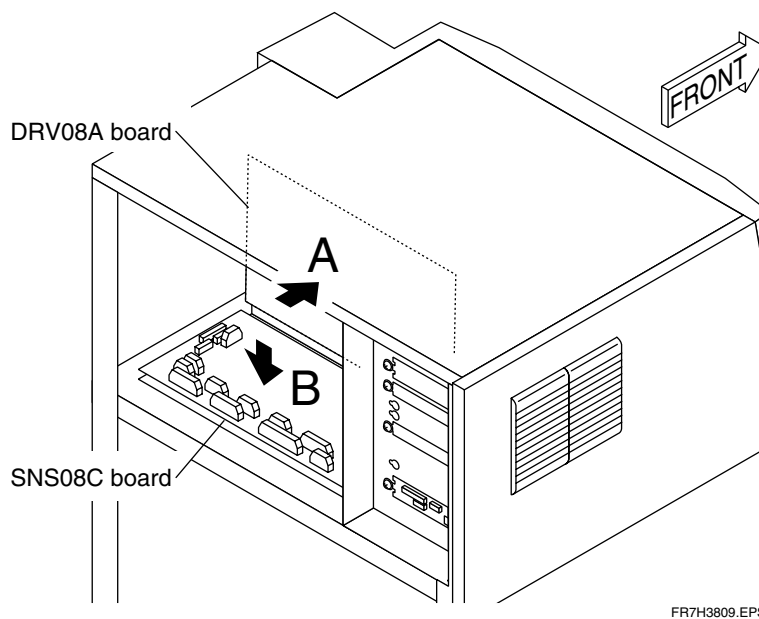
For high-speed multi-objective frequency processing (MFP): "2"

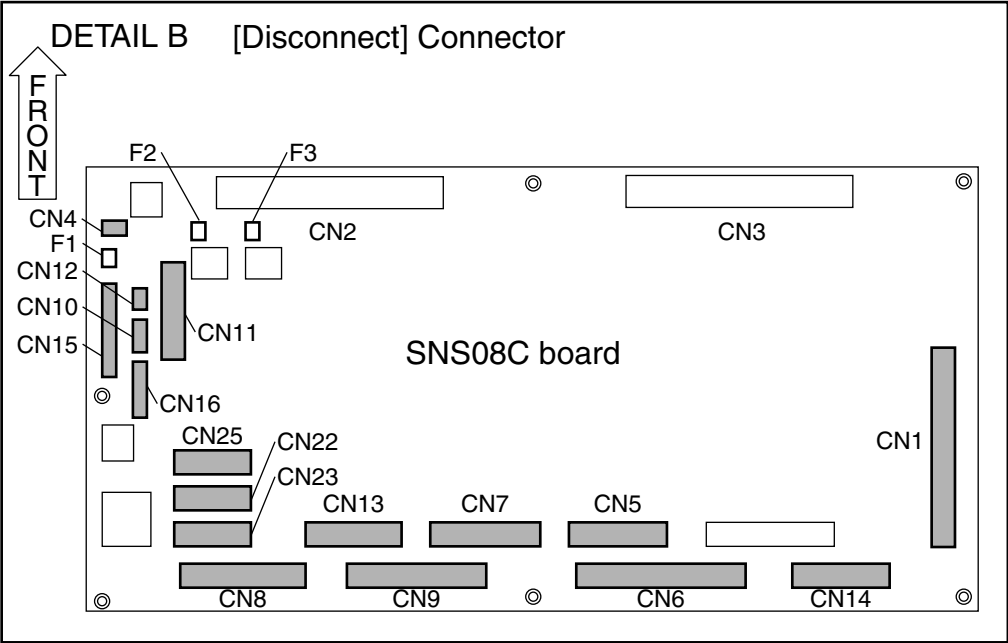
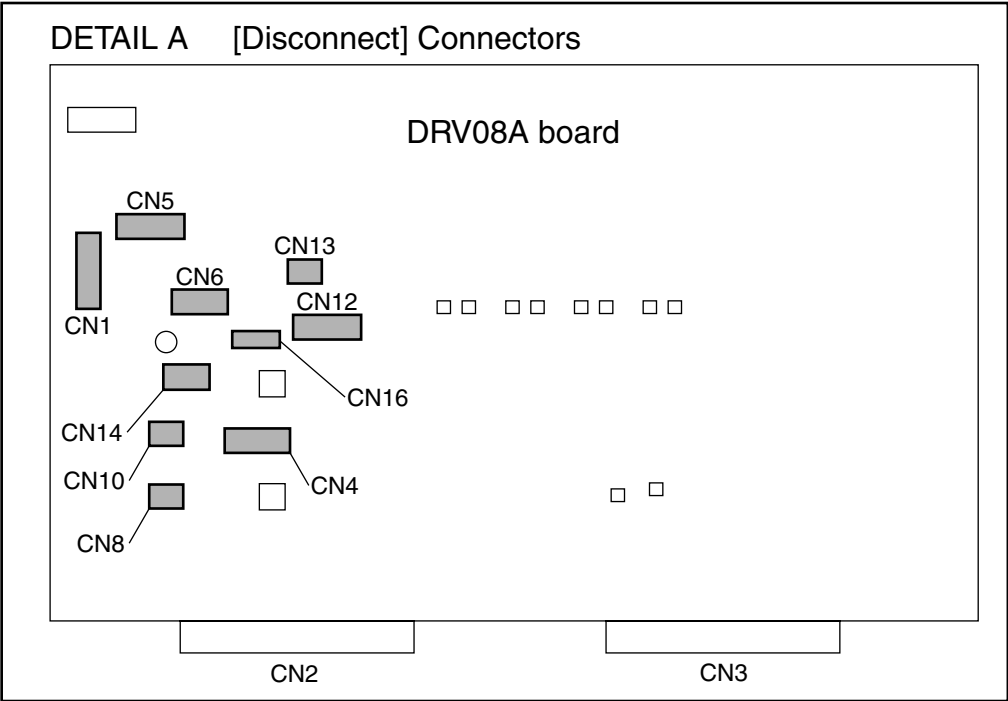
For high-speed pattern enhancement processing for mammography (PEM): "3"

## 15.11 SNS08C and DRV08A Boards

### ■ Removal procedure

- (1) Remove the following covers:
  - Upper right-hand side cover
  - Upper rear cover “3. Removing and Installing the Covers”
- (2) Disconnect the connectors.



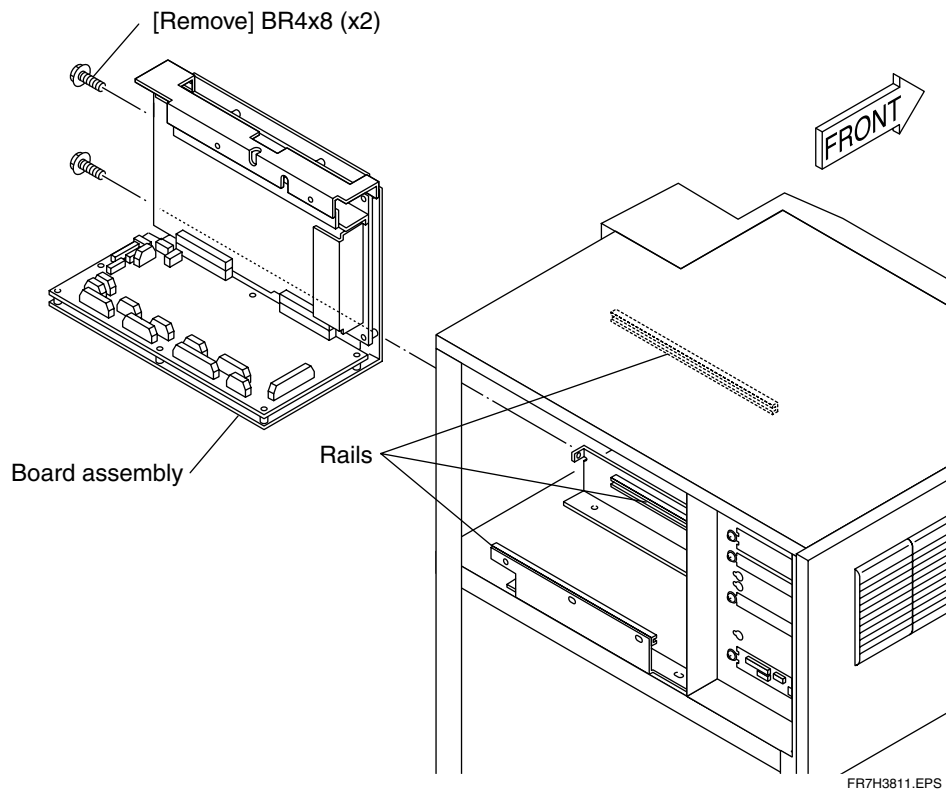


FR7H3810.EPS

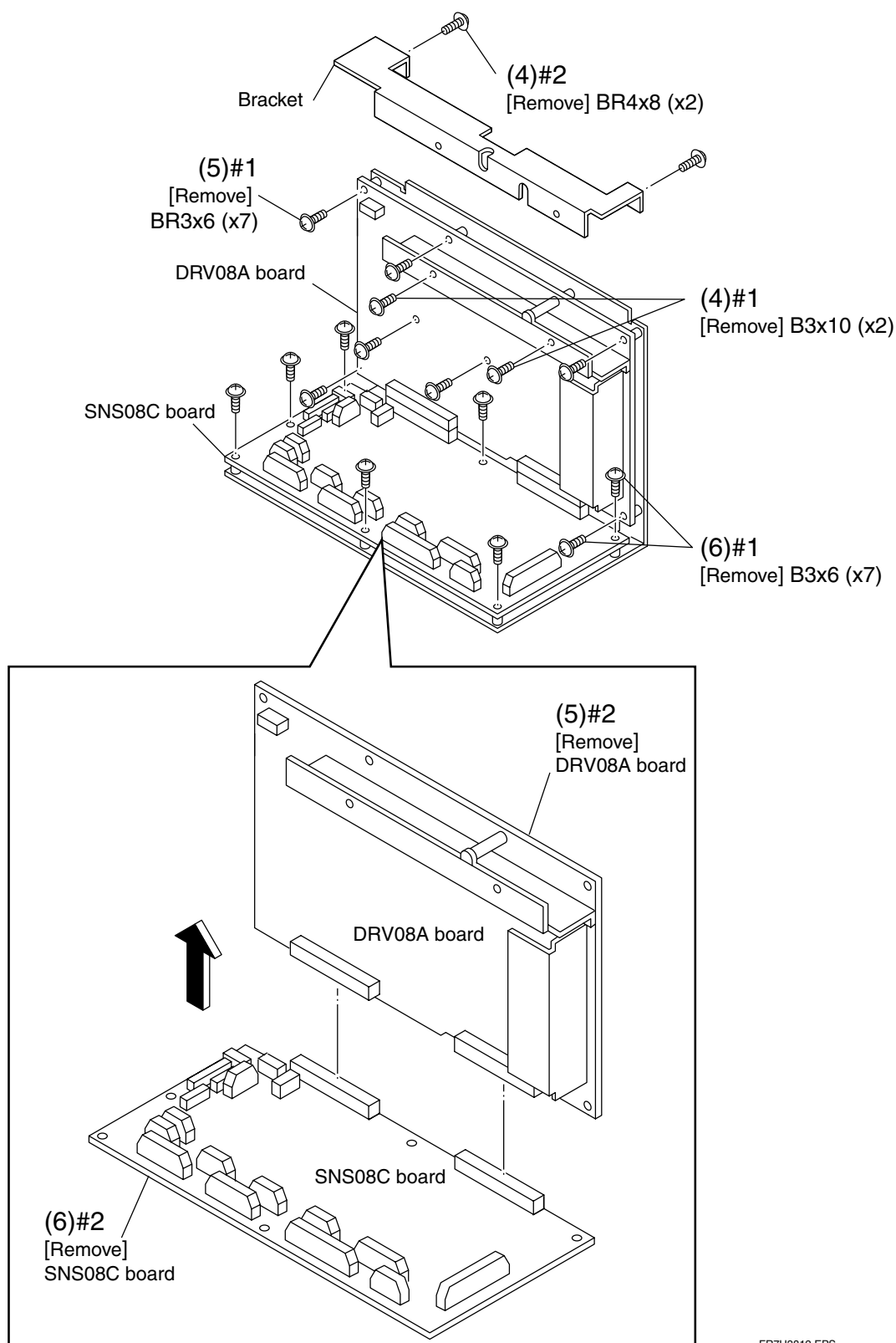
(3) Remove the PC board assembly.

◆ **NOTE** ◆

*The board assembly should be removed and installed along the rails.*



- (4) Remove the bracket.
- (5) Remove the DRV08A board.
- (6) Remove the SNS08C board.



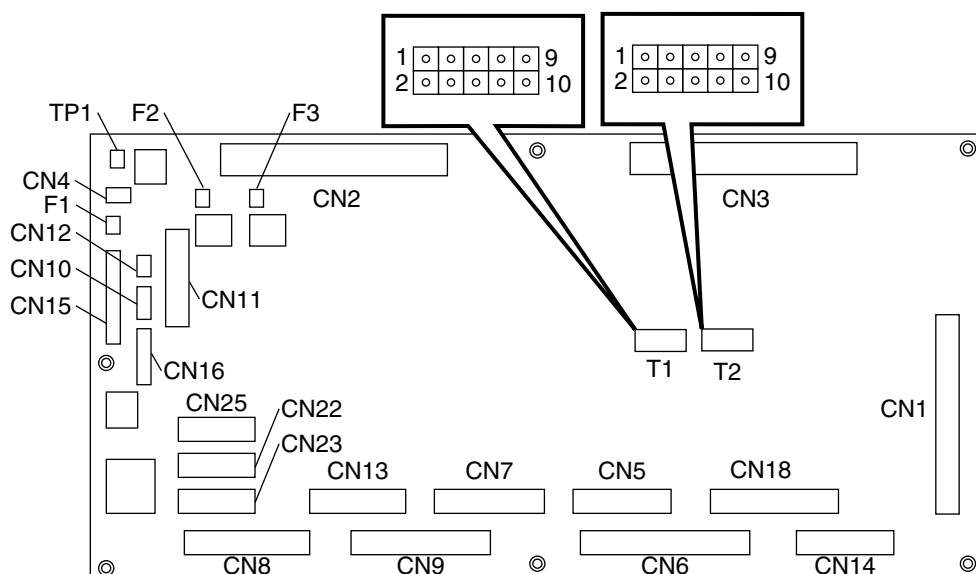
FR7H3812.EPS

## ■ Installation procedure

Accomplish installation by reversing the removal procedure.



## ■ SNS08C board



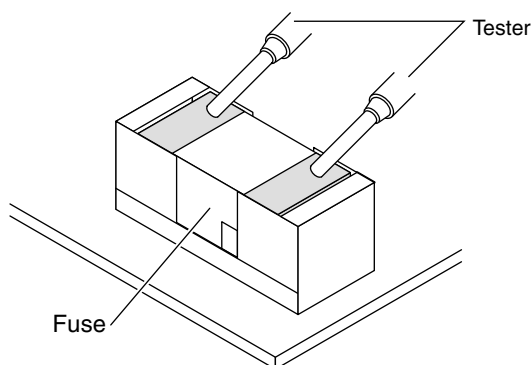
FR7H3844.EPS

### ● Fuse Ratings

Location Name	Rated voltage	Rated amperage
F1	125 V	5 A
F2	125 V	2 A
F3	125 V	1 A

### ● Checking the Fuses

Measure the resistance value across the fuse. If the measured resistance value is 100  $\Omega$  or greater, it is judged that the fuse has been blown.



FR7H3823.EPS

### ◇ SUPPLEMENTARY NOTES ◇

- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.
- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is 1  $\Omega$  or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.

## ● Action to be Taken When the Fuse Has Been Blown

Replace the fuse according to the following procedures.



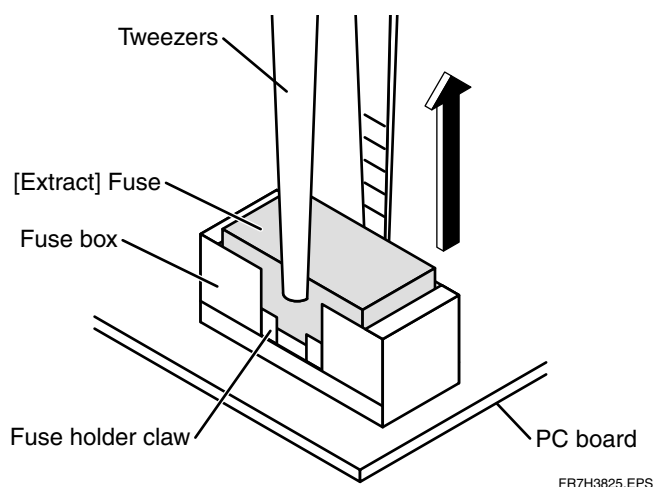
### CAUTIONS

- Be sure to replace a fuse only with another fuse of the same type and rating (A). Also, confirm the fuse rating (A) that is silk-screened on the PC board.
- When replacing a fuse, use tweezers and exercise care not to damage the fuse holder claw.

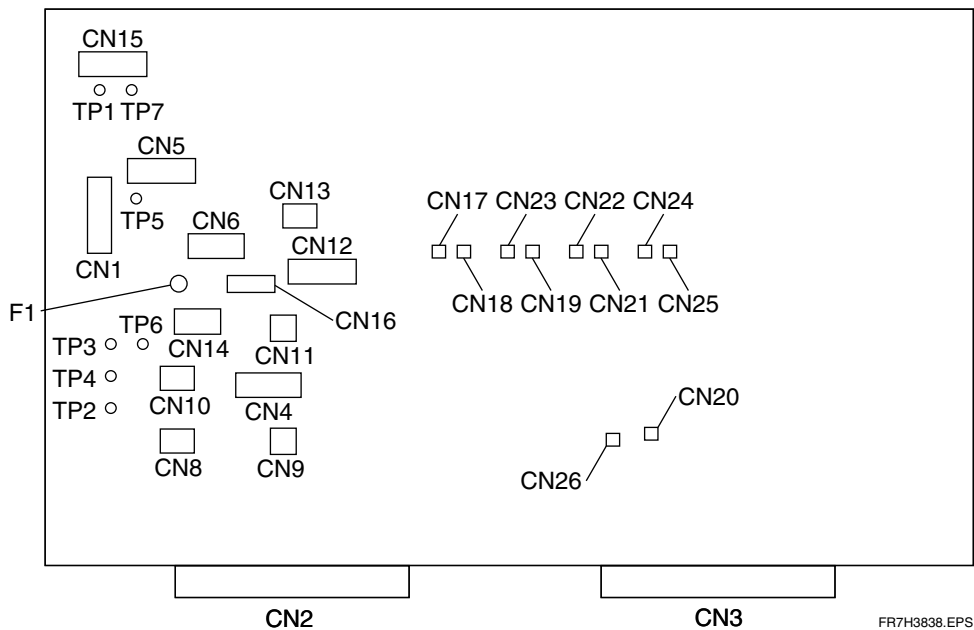
(1) Remove the SNS08C board.

 "■ Removal procedure"

(2) Pull the fuse out and then replace it with a new one.



■ DRV08A board

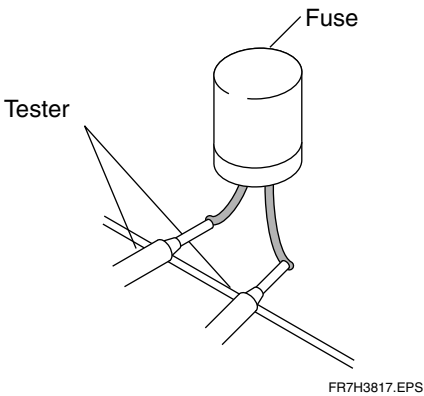


● Fuse Ratings

Location Name	Rated voltage	Rated amperage
F1	250 V	1 A

● Checking the Fuses

Measure the resistance value across the fuse. If the measured resistance value is 100 Ω or greater, it is judged that the fuse has been blown.



◇ SUPPLEMENTARY NOTES ◇


- For the tester, its probe resistance (resistance value at the time of probe shorting) should be measured before measurement, and compensation should be made with respect to the measured value of the fuse.
- You cannot accurately determine whether a fuse is blown or not while the associated board is mounted in the machine. However, if the resistance value measured across the fuse with the board installed in the machine is 1 Ω or greater, it is highly probable that the fuse is blown. In such an instance, demount the board and check whether the fuse is actually blown.

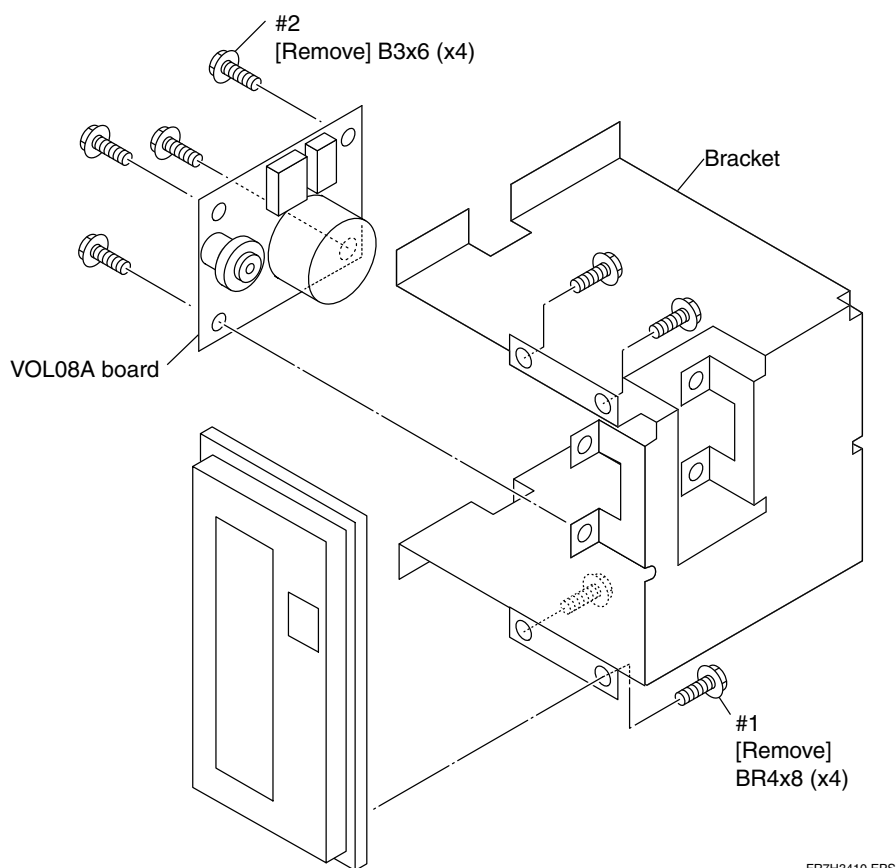
● Action to be Taken When the Fuse Has Been Blown

Replace the boards.

## 15.12 VOL08A Board

### ■ Removal procedure

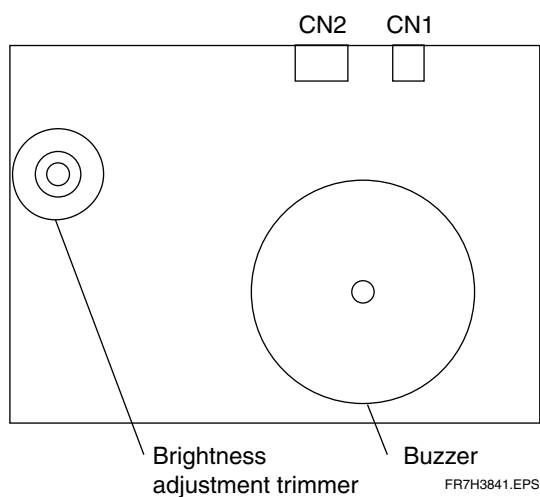
- (1) Remove the floppy disk drive.  
 "12.1 Floppy Disk Drive (FDD)"
- (2) Remove the VOL08A board.



### ■ Installation procedure

To accomplish installation, reverse the removal procedure.

### ■ VOL08A board

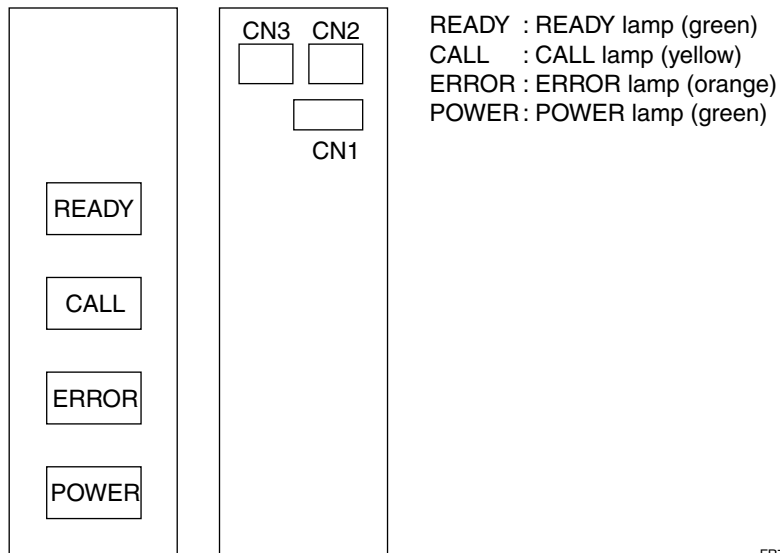


## 15.13 LED08A Board

### ■ Removal and installation procedures

☞ “10A” in the “Service Parts List” volume

### ■ LED08A board



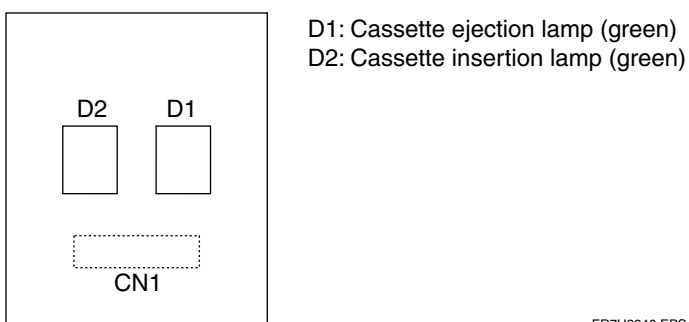
FR7H3839.EPS

## 15.14 LED08B Board

### ■ Removal and installation procedures

☞ “01E” in the “Service Parts List” volume

### ■ LED08B board



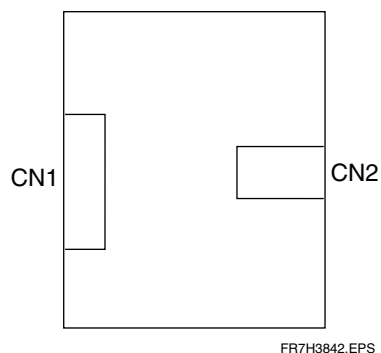
FR7H3840.EPS

## 15.15 BCR08A Board

### ■ Removal and installation procedures

☞ “07D” in the “Service Parts List” volume

### ■ BCR08A board



## 15.16 SYN08A, PMT08D, PMR08C, SCN08D/SCR08D, and PHV08D boards

SYN08A board

☞ “9.7 SYN08A Board”

PMT08D board

☞ “10.7 PMT08D Board”

PMR08C board

☞ “10.8 PMR08C Board”

SCN08D/SCR08D board

☞ “10.19 SCN08D/SCR08D Board”

PHV08D board

☞ “10.20 PHV08D Board”